



BUILDING STRONG BODIES



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THE WOODS HUTCHINSON HEALTH SERIES

BUILDING STRONG BODIES

BY

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"Community Hygiene," etc.*

Enlarged Edition



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A WORD TO TEACHERS

THERE is one motive which appeals to the child more strongly and more constantly than any other. This is the desire to be strong of arm, fleet of foot, long-winded, quick of eye and hand. The ambition to be a leader in the world of outdoor games and sports, means to him just what success in business or prominence in citizenship will mean in later years.

Play is the very life of the child. He cannot be either healthy or happy without it. It is Nature's own scheme of education. Play is both a sign of health, and a cause of more health. From the time that the baby begins to play with his tiny pink toes and to clutch at the sunbeams, his waking hours are one continuous series of games, in which first his mother and his father, then his little playmates, and finally his teacher have their parts. Why should we not take advantage of this deep-rooted instinct for health in our scheme of education?

Growth and health depend upon exercise. The only way to gain more strength is to use actively what one already has. The child's mind and body grow absolutely side by side. Neither can

develop without the other; and whether muscle helps mind most, or mind muscle it is impossible to say. Why should we not take both into account and make education part school, part play?

In the problem of teaching the rising generation how to grow strong and healthy, play out-of-doors has two practical advantages: First, children like it, which is strong presumptive proof of its value; second, it really does promote the growth and development of the whole child, body, mind, and character as nothing else can. Play in the open air builds the muscles; it builds up the heart and lungs; it builds up the brain and senses. Out-of-door play does all this with *no danger of overstrain*, because it goes in rhythms of effort and rest: Chase — tag — rest; Strike — run — rest; Catch — throw — rest; and so through any game. Never does it test to the limit the endurance of the child; but it stimulates to the utmost, sharpening the appetite and ensuring good digestion. Train a child to play vigorously and sensibly and you will ingrain into his very marrow health-habits which will last all his life through; and better still, you will also make him into a true socialized being, able to work with his fellows.

WOODS HUTCHINSON

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Building Strong Bodies



CHAPTER I

THE IMPORTANCE OF PLAY

PLAY is when we are alive all over. We play best out-of-doors. We come out of the house on a bright sunshiny morning, and see the sparkle in the air and feel the cool fresh breeze on our faces; we hear the rustle of the tree-tops and look up to see the little white clouds floating across the bright blue sky; and we feel like running and jumping and skipping and shouting out loud, just because we are so full of life. As we say, "We feel just bubbling over," for the great outdoors has got into our blood.

If any one were to ask you why you threw your arms about and shouted to every playmate within hearing; or why you climbed fences and trees or turned somersaults and handsprings; or why you rushed after every child who came near you to play tag or to frolic, you would probably answer that you "felt like it," or that you "just couldn't help it!" And this would be a very good

answer, because your arms and legs and lungs are so full of life and are growing so fast that they must do something to use up some of their vim and energy. When you use your muscles in this

*Kodak*

"WARMING UP"

A short, brisk run is fine preparation for either play or study.

active way, you build them up and so strengthen and train your whole body for the part that it will have to bear in the battle of life. Therefore, it is the most natural thing in the world for you to want to play, and one of the best things for you to do, also, especially if most of your games are out-of-doors.

The only way in which you can get more skill and strength and speed is by using what you already have. The best way of doing this that has

ever been invented is to play. There is an old, old story about baby bears that illustrates how important play is in the life of young animals. Bear cubs, so the hunters used to tell, are born early in the spring, in dens far underground or in caves in the side of a hill. They are kept hidden there by the mother bear until they are able to run about and climb trees and dig for grubs in rotten logs, and take care of themselves in other ways. While she is teaching her cubs these things, the mother bear is very fierce and watchful; and, if any one attempts to come near her den, she rushes out and chases them away in a hurry. So no one, according to the hunters, ever gets a chance to see the baby bears until they are able to run about and play by themselves. Hence it comes to be told that, when the little bears are born, they are mere shapeless lumps; and the mother keeps them hidden until, partly by licking them with her tongue, and partly by letting them play and work themselves into shape, she feels that they will be able to keep out of danger. Now our own bodies are born, not shapeless by any means, but weak, soft, clumsy, and helpless. It is by play and work that they are made strong and graceful. Think how a baby tumbles about when it first tries to walk—and then

think how soon it learns to control its arms and legs, if it is given plenty of chance to exercise them.

Education is one of the most important things in the world. We think of it as chiefly something to be learned out of books, at rows of desks in a



Narragansett Machine Co.

THE GIANT STRIDE

This provides exercise for all your muscles; and it is very good fun, besides.

schoolroom. This part of it, of course, is very necessary and valuable, for without that training we should not know how to make the best use of books and libraries, and we should have much difficulty in making our way in the world. But there is another part of our education no less important. This is the training of our bodies to make them healthy and tough, nimble and long-

winded, with keen eyes and sharp ears, for all these things help to a good memory and to sound judgment. Without these, all the training of our brains through books in the schoolroom will be of little value, because "a sound mind in a



Columbia Graphophone Company

SETTING-UP EXERCISES

A setting-up drill between school recitations is good for both teacher and pupils.

sound body" is the one combination that will enable us to make the most of ourselves. This education of our body we can get best in the great Play-Room of All Outdoors, the home of health.

Very probably you have heard older people speak of play as if it were nothing but a waste

of time. Usually this sort of thing comes from rather stiff and solemn grown-ups who seem to have forgotten that they ever were children. Probably what they really mean is, not that play is of no use, but that it makes you forget everything else. Thus, play may make you late for school, or it may help you to forget to go home in time to do the afternoon errands and chores. Sometimes, too, these older people think that you ought not to play when you could use the time to earn nickels or dimes, or when you might be studying the next day's lessons. There is, then, this narrow sense in which it might, perhaps, seem that the time spent in games and sports out-of-doors is wasted. Yet the wisest people have discovered that it is a great mistake to think so, for the simple reason that, if you want to work well and earn a fair share of nickels and dimes, and if you want a good mark in your recitations and high standing in your examinations, you need strong muscles and nerves, clever hands, a good memory, and a clear head. All these things go together; and the best place in which you can get them all is out-of-doors, in good wholesome play.

Play is good first of all because it takes you out-of-doors and keeps you there. There are, of

course, games that can be played indoors; and these do very well in stormy weather. But the open air is the only place for real fun, for live games, for sports that require range and elbow-room. Out-of-doors you have a chance to shout without deafening everybody, and you are not so liable to break windows.

Boys and girls who are truly alive long for games in the great outdoors, and are never contented to be penned within the walls of a room. Those who spend plenty of time in the open air grow faster, keep healthier, have straighter, more graceful bodies, and also make better progress in their studies than those who stay most of the time in the house or in workshops or factories. At least an hour a day at play in the open is necessary for every growing child. Two hours, of course, are much better.

*Kodak*

LEAP FROG

This game builds up the muscles of legs, arms, and back.

Now you will probably ask why playing games out-of-doors is so much better than playing them in the house. The answer is this: Everything in the world that has movement or life or growth is driven by the sun — partly by its heat, partly by its light. The winds, for example, are great suction currents made by the heat of the sun, caus-



Community Service

PITCHING QUOITS

Games of this sort train eye and hand to work well together. In the background may be seen an outdoor gymnasium.

ing the air to swirl and bubble like water in a boiling pot. Then the great trees and the little waving grasses, the flowers, the crops of wheat and corn and oats are all built by taking plant foods from the soil and the air, and making them, with the help of the sun's light and heat, into stems and leaves and grains. Finally, our own bodies

are sun-motors, getting part of the electric power that we need for life and health and growth at second-hand, so to speak, through the food we eat. Food does its work in driving our muscles and building our bones, and making eyes, ears, and nerves keen and quick; but much of our energy we must get truly at first-hand, direct from the sun itself; and that is what we do when we play in the open air. And there is no other way to get all the energy our bodies need.

QUESTIONS AND PROJECTS

1. Can you tell why you like to play?
2. Why does the mother bear guard her babies so carefully when they are small?
3. How does play train your body so that you will have a "sound body and a sound mind"?
4. Where is the natural playroom for boys and girls? Why is this the best place to play?
5. What answer will you give the person who says that play is a waste of time?
6. What great gift will the sun give us if we spend our time out-of-doors?
7. See if you can write some slogans that will make your classmates want to play out-of-doors.
8. Can you plan your day so that you will be able to spend two or more hours at play? Try it.

CHAPTER II

HOW PLAY BUILDS MUSCLE

I

NOT only children, but all kinds of young things that are growing fast, need a great deal of play and muscular exercise. If we watch a family of young birds, for example, we shall see how they build up their strength and how they learn to fly. Like the young birds, you should make your muscles and nerves sturdy and tough, and keen and sure, by play, because you will use them in earning your living when you grow up.

As you probably know, little birds are hatched from eggs laid in a nest tucked away in some bush or tree, or under the eaves of a building, or even on the ground hidden in the grasses and ferns. They are born almost without feathers and with their eyes still shut. They then seem to be nearly all mouth, opening their beaks to such a tremendous gape when any one comes near the nest that you would think they would pretty nearly swallow each other.

The mother and father birds know well what that means and fairly pour the worms and cater-

pillars and insects into those yawning little mouths, working from daylight to dark to try to fill them up. This is what makes birds such good neighbors; they save so many of our fruits and vegetables and crops from being eaten up by caterpillars and other insects.

The parent birds get the results that they are working for, for within a very few weeks the nestlings have grown so enormously that they fill up the whole nest, and it looks as if they would fall over the edge if they grew any bigger.

Then the mother bird begins to change her plans, and, instead of



BIRDS ARE THE BEST OF NEIGHBORS

coming right into the nest with nice juicy worms and dropping them in turn into the open beaks, she lights on a branch a few inches away from the nest and coaxes the baby birds to scramble and flutter out of the nest along the twig to

reach it. In a few days more, their feathers are well grown, and they have learned to balance themselves on the branches with their wings; and then the mother seems to tell them that in the future breakfast will be served only on the grass at the foot of the tree. And if any little bird is too lazy or too timid to flutter out his wings and take the plunge down, the mother or the father bird gets behind him and gives him a little shove to start him off; then they help him to flutter and scramble back into the nest again. The next day, perhaps the caterpillars are brought to another bush or tree, ten or fifteen yards away from the nest, and the young birds are coaxed to fly across that distance.

Then the birdlings are shown where to find their own caterpillars and how to dig their own worms and catch insects on the wing for themselves; and only when they can do this, and can fly swiftly and fearlessly wherever they wish, and twist and turn and dodge in every direction, do the mother and father birds consider their education complete.

They know well that there is a time coming when there will be no more blue skies and green trees and grasses and warm soft winds, and that all the birds will have to fly away down South to

find new feeding-grounds, and to escape the frost which will freeze all their worms hard and fast in the ground, and the snow which will drive away all their caterpillars and insects. If any little bird has not played these tumbling and flying games hard and cheerfully, he will be left behind in cold and hunger, because his wing muscles will not be strong enough to carry him the hundreds and thousands of miles that he must fly to reach the land where there is summer sunshine.

There are young birds in South America called "brush-turkeys," who get no play because they are hatched from eggs that are laid in great piles of grass and weeds heaped together by the father and mother birds. As soon as the pile is big enough, a hole is scratched and the eggs put in it and covered over, and the old birds go off about their own affairs and leave them to be hatched by the heat given off from the grass and weeds as they decay.

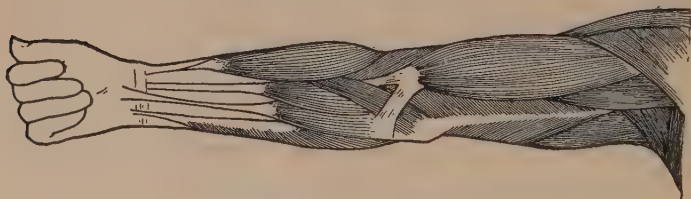
When the young birds are hatched, they are fully feathered and can not only run about at once, but, within a few hours, as soon as their feathers are dry, can fly right up into the trees and shift for themselves.

But I think that they cannot get much fun out of life, losing all their play-time; and it is no won-

der that they grow up stupid, melancholy-looking birds, with rusty brown feathers and red necks and a squawky cluck instead of a cheerful song.

II

PLAY makes muscle, and muscle helps build brain. Our muscles are not only the "livest"



THE MUSCLES OF THE ARM

part of us, and the part that we depend upon most in our play, but they are also the largest part of us. Nearly one half of our body weight is muscle; whereas only about one fiftieth is brain.



Surely we ought not to neglect our muscles and work our brain as if these weights were exactly reversed! Instead, we ought to devote a reasonable

HOW THE MUSCLES SHORTEN
WHEN THE ARM BENDS

amount of time to training our muscles, since this

is the best possible way to store up energy, and to develop our brain for our life-work in the years to come. The training of our muscles is absolutely necessary in making for ourselves a sound body and a sound mind.

Our muscles are the only parts of our body that we can really order about; and thus they are the only parts through which we control our body. We set our muscles going; they do the rest. Every order that we give our body, or any part of it, has to be carried out by a muscle. Everything that we do to increase our strength, or to improve our health, or to train our minds, is done through the help of muscles. It is perfectly clear, of course, that if we want to walk anywhere it is our muscles that carry us. But the use of our muscles in merely standing still, or in looking at something, or in reading a book, for example, is something that we do not realize without a little thought. It is, however, equally true that it is still our muscles that help us keep our balance, that turn our faces in the direction we wish, and that focus our eyes on the page. Even merely keeping awake calls for the use of muscle, though we may not be conscious of it; for there are little muscles that pull our upper eyelids up and keep our eyes open; and, when we feel sleepy, it is be-

cause these little muscles have grown tired — and then we can't keep our eyes open, or stay awake, any longer. In fact, whenever we are "tired" — of playing, of reading, or of studying, or of anything else — it is not our brain or our nerves that are tired, but our muscles.

Just for fun, try to see if you can think of anything that you can do without using a muscle. You will find that you cannot even sit still and think without the aid of some muscle; for you have to use muscles to hold your head up, and also to keep your eyes open or to shut them. And if you reach for a book, or speak or move in any way, just notice how many muscles you can feel coming into use. So, you see, the more you try to do, the more muscles you call upon. You would not know that you were alive if it were not for your muscles.

Nor is this all. Not only do your muscles enable you to play and to work, just as you wish, but they are the only means by which you can make yourself grow. You cannot make your hands or your feet grow just by thinking about it, but these are full of muscles just like the rest of your body; and you can make all your muscles healthy and strong by giving them plenty of exercise. Perhaps you will say, "Yes, but doesn't eat-

ing food make us grow?" Certainly; but there are muscles that must help to digest our food, which work without any control or orders from our brain. For example, your stomach is made of muscle, and so are your lungs and your heart. As to eating, there is no use in just poking food into your mouth, whether you want it or not. You must have an appetite if your food is to make you healthy and strong. If you do come to the table with a fine, big, healthy appetite, as you surely will after plenty of lively, happy exercise in the open air, you will give your stomach a proper amount of work in taking care of your food. Thus your digestion will increase in power, and more building material will be given to your body. Furthermore, when good wholesome food has been properly digested and built into the body, your heart is able to work harder and pump your blood vigorously all through your body. In this way, good lively play out-of-doors, followed by food like bread and milk and beef and apple-sauce, leads to a good "circulation" of blood; and it leads also to a bigger, stronger heart. Like your whole body, too, your brain grows not only stronger but bigger; because, curiously enough, it is during the years when you are playing most actively that your brain is most rapidly increas-

ing in weight. Therefore, if you do not build up strong arms and legs and back, you will be in some danger of growing "topheavy"!

QUESTIONS AND PROJECTS

I

1. See if you can discover the lesson about play that the birds will teach us if we watch and study them.
2. In what condition are the small birds born?
3. In caring for these helpless little ones the parent birds render us a great service. What is it?
4. How do the wise parent birds educate their nestlings?
5. Why is it important that they learn their play and work lessons well?
6. Who is the queer bird citizen who never plays when he is young? What kind of a grown-up bird is he?

II

7. Compare the size and weight of your brain and muscles. How should they be trained if they are to grow equally well?
8. Do your muscles obey orders promptly and well? Test yourself during your next gymnastic lesson or game.
9. Do you find that good muscles are quite necessary to a live boy or girl? Why?
10. What are the important muscles that you cannot control no matter how hard you try?
11. What should be the effect of several hours of active play on a healthy child's appetite? Is this true with you?

12. How does play out-of-doors make you grow in mind and body?
13. Make a health booklet in which you can write the health rules as you learn them. You can illustrate the rules with pictures. You can also keep your own health record.

CHAPTER III

HOW PLAY FITS US FOR OUR WORK IN THE SCHOOL-ROOM

You know, of course, where your brain is, right behind your forehead, and above your eyebrows and ears. It fills the whole upper two thirds of your head and gives it its shape. The bony part of your head, or skull, is simply a thin, but very



THE BRAIN

hard and strong, shell or box of bone, moulded over and covering your brain, just as a snail's shell covers his body. When you are first born, your

skull is quite soft and flexible, little thicker or stronger than stiff pasteboard; so that as your brain grows it can easily expand and grow larger with it.

If you put your hands to your head and hold it gently but firmly, you can feel and tell within half an inch what the size of your brain is. You will probably be surprised to know how large it is,

about as big as an oval muskmelon the length of your hat. Why do you suppose you need such a tremendously big brain? It is because the brain is a combination of telephone-exchange, and library, and picture-gallery, and hall of records. It receives messages from all parts of the body, and either stores them up or transmits them to other parts. It governs all our thoughts and actions. From it little silver-white, living wires, called nerves, run down the spinal cord, out through the openings in the backbone on each side, and spread to every corner and square inch of the body, from your scalp to the ends of your fingers and the tips of your toes.

Although our brain is so big and does such wonderful things and seems to be so complicated, the plan by which it works is really not so very hard to understand. The nose, for instance, sends in so many messages to the brain-central — what food smells good to eat when dinner is getting ready, what air smells stuffy or bad and not good to breathe — that it needs a little private switch-board or section in the brain to attend to them, and we call this the nose, or *olfactory* lobe, or nose-brain. The eye is constantly flashing in pictures of what is coming, of warning, or of pleasure; and these need a special central of their own, which

we call the *optic* or eye-lobe. Also the ear, with its countless ringings or vibrations of sounds, of speech, or of music, needs a little keyboard for itself, the hearing or *auditory* center. Then the great nerve-cables, which carry the outgoing or *motor* messages from the brain to move the muscles, have a center nearly in the middle of the base of the brain. And, finally, toward the back of the brain, is a balancing center to keep the body and muscles in balance when walking or dancing or swimming.

All these lobes and centers stretch along the base of the brain from the root of the nose to the back of the head; and over the top of them rises the managing or directing department, keeping them working smoothly together, storing their messages and pictures, and thinking and reasoning. But big and important as this great upper story of the brain is, there is not a nerve wire or a nerve cell in it which has not grown out of the group of simple little message-and-answer centers along its base. What is more, it is still dependent upon them and would be utterly helpless without them.

When we play in the open air or work in the garden, we are using our eyes and hands and arms and back and judgment and memory all to-

gether; and by this varied activity we are building up and exercising and improving our brain and its nerves. To play better means to think better. In throwing a ball, or in listening for sig-



Massachusetts Civic League

LEARNING HOW TO CARE FOR A GARDEN

nals in football and then plunging through the line or running around the end, as we are told, we are building and strengthening the very same cells and fibers in our brain that we use for learning our lessons or doing sums or weaving baskets or making boxes.

The old saying is a very true one, "All work and no play makes Jack a dull boy." It may sound impossible, but it has been proved that, if

boys and girls spend one third of their school hours in play in the open air, they will often do more work and better work in the schoolroom in the other two thirds of their time than if they spent the whole of the school-day indoors over their books. So, if you want to stand high in your classes, play just as hard and as intelligently and as skillfully as you possibly can.

Now you are ready to understand how it is that the men who take the keenest interest in their health, and are at the greatest pains to keep themselves in splendid physical condition and training by sports and games, often have the ablest minds and the brightest intellects and make the most lasting mark upon history.

The most brilliant and wonderful people of all time were the ancient Greeks. They lived more than two thousand years ago, but their marble statues, their temples, their poems, their plays, and their books of philosophy and wisdom have never been equaled since, and are still a wonder to the whole world. They laid the foundations of civilization and of much of modern government. Yet this intellectual people made sports and open air dancing and gymnastics one of the most important parts of their method of education.

They had two classes of teachers, the peda-

gogues or indoor teachers, and the gymnasts, who taught out-of-doors; and success under the latter was as highly valued as under the former. Children were carefully trained to run and leap and play ball-games and throw the *discus* or quoit and hurl the spear. They were carefully rubbed down and massaged after exercising and every effort was made to have them grow straight and strong.

Their statues show how marvelously they succeeded, for such types of vigor and beauty as the Apollo, the Discobolus or discus-thrower, and Aphrodite, and Athena



THE DISCUS-THROWER

An ancient Greek statue, representing a game somewhat like the modern game of pitching quoits.

have never been equaled since. To be a winner in the great Olympic games was to be one of the greatest men in the nation. Yet these champion athletes and soldiers and choral dancers were also often great writers and rulers and thinkers. A little more of this happy old Greek system of

play and music mixed with work, for both children and grown-ups, would do wonders for the people of the present day, even though we might not all develop brains like those of the ancient Greeks.

In modern times the great progressive nations are all keenly alive to the importance of games and bodily training, and are making them a regular part of school work with credits given for them. It is a splendid thing that cities and towns have come to realize the importance of playgrounds, since before these were established city children lacked proper opportunity for out-of-door exercise under intelligent supervision.

Boys and girls who were fortunate enough to grow up in the open country, on the other hand, had many great advantages, among the fields, the woods, and the rivers, where they could run and wrestle and climb and swim. This is the reason that so many country boys became famous men; the health and strength that they built up in their boyhood and young manhood carried them through to success in later life.

Some of our greatest and most famous men owe much of their powers of accomplishment and clear-headed judgment to their splendid physique and the care which they took of it. Three of the greatest of our Presidents, for instance,

Washington, Lincoln, and Roosevelt, were almost as distinguished for their strength and athletic vigor as for their statesmanship. Washington was a famous woodsman and hunter, and on

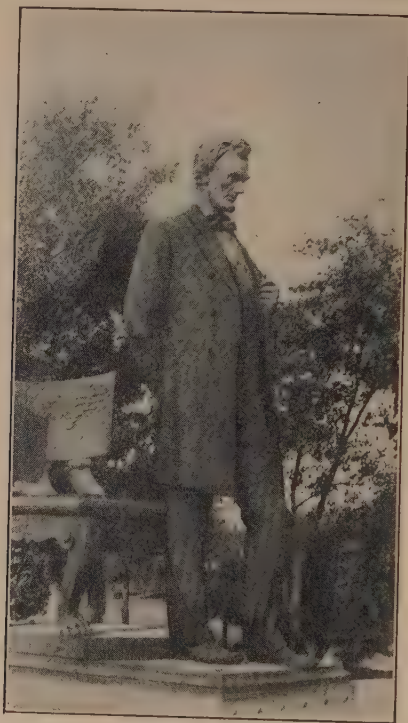


GEORGE WASHINGTON, THE YOUNG SURVEYOR

his long surveying trips through the trackless wilderness endured the severest hardships and tests of endurance. He was a great horseman and rode over the rough country roads and hunted through the woods of his estates up to the very week of his death.

Lincoln was reputed to be one of the strongest men in his home county, and many stories are told of his triumphs as a wrestler; while his feats

and prowess as a rail-splitter and as a river-boatman poling heavily loaded flatboats up swift rapids have passed into a household word. In later



ABRAHAM LINCOLN

years he kept up his strength by long walks about the capital.

Roosevelt's experience was even more to the point, because as a boy he was not sturdy and robust, but of rather frail physique, which he

deliberately set himself to improve. Under the watchful care of his father, he slept out on a porch, took regular exercise in the open air, and built up his vigor and strength by rowing and swimming in the Sound and riding and tramping across the hills of Long Island. To show how open-air life had come to interest him, Roosevelt when only fourteen found time, on a trip which his father gave him on the Nile, to make a collection of Egyptian birds of such value that it is still preserved in the



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THEODORE ROOSEVELT

As colonel of the Rough Riders, in the war with Spain, 1898.

Smithsonian Institution in Washington. Later he went up into the North Woods, and with a guide camped out, slept on balsam boughs, fished and hunted, and finally grew into a strong, vigorous man, a boxer while at Harvard, a famous cross-

country hiker, rider, and big-game hunter. His adventures as cowboy and ranchman in Dakota and the raising of his famous Rough Rider Regiment in the Spanish War made a valuable basis for, and played a considerable part in, his political success.

Another instance of what can be done by care and training for a naturally weak body is that of John Wesley, the famous founder of the great Methodist Church on both sides of the Atlantic. In early life his health was poor, but beginning, at his father's advice, by running every morning three times round the green at Charterhouse, the well-known preparatory school, he gradually built up his strength by walking, riding, and athletic sports. In his early college days he made out a regular program of study, exercise, sleep, and play for each day of the week. This went even to such heroic and rigid lengths as rising at four in the morning, "to cure myself of lying awake in bed." He seems to have had a remarkable power of getting fully rested by from four to five hours of sleep. But this was probably a special gift and good fortune of his own, which few of us could acquire by any amount of training or practice without danger to our health.

Although his first visit to America, just after

his student days, had to be cut short on account of ill-health, he gradually increased in endurance till he was able to perform the astonishing feat of preaching fifteen sermons a week and traveling five thousand miles a year; and travel in those days meant riding on horseback or in the roughest of stage-coaches over abominable roads, in every sort of weather. Thus, ultimately, "below middle height, but beautifully proportioned, muscular and strong," he was fully launched on his marvelous life-work, which never slackened until a few years before his death at the age of eighty-eight.

In the realm of scholarship and education a striking instance is the long and brilliant career of the great President of Harvard, Charles W. Eliot. It was largely his keen and vigorous practice, all his life long, of athletics and horseback riding which made it possible for him to hold his office for forty years and then retire voluntarily at the age of seventy-five in full health and vigor. This same practice kept him from growing old after he retired. Always a famous oarsman, he was reported to have rowed five miles upon his eightieth birthday. To the end of his long life he was healthy, vigorous, alert of mind, and sympathetic with every progressive

movement for the improvement of education and for social betterment. It was often said of him that he was really younger and more progressive than many a man thirty years his junior.

Similarly, some of the most famous men of affairs in Europe have been and are almost as much distinguished for their fine physique and the care they take of their health, through exercise, diet, and sports, as for their intellectual prominence. Gladstone, the famous Prime Minister of England, took long walks from his boyhood days, lived much in the open air, and made the felling of great trees on his estate his favorite sport. By these means he preserved his health through a long and most distinguished public life, extending over nearly sixty years. He was the only English statesman who was ever four times Prime Minister, and his six feet of height, square shoulders, erect carriage, and vigorous rapid gait, "nearly twice as fast as most men," had much to do with enabling him to carry through the astonishing labors and accomplishments of his long and brilliant career. After hearing him make a great speech in his eightieth year, some one exclaimed, "I envy him his magnificent mind." Sagacious Lord Salisbury commented, "I envy him his magnificent body." He retired voluntarily at eighty, and lived happy and active in almost

unabated health and vigor to the age of eighty-nine years.

Albert, King of the Belgians, whose heroism and endurance are fresh in every memory, would make a superb center rush on a football team, with his nearly six feet of height and breadth to correspond. He has been a famous sportsman and mountain-climber from his student days. His out-of-door life laid the foundation for his superb command of the army, whose headquarters at La Panne were for four terrible years continually under fire from the German guns, and for the final victorious sweep which brought him in triumph to Brussels.

QUESTIONS AND PROJECTS

1. Where is your brain? What have you to protect it and keep it safe?
2. Why do you need such a large brain?
3. Into what two parts is your brain divided? Can you tell what each part does for you?
4. In our games we say that the best players are the people who keep their minds on it. What does that mean?
5. How does keeping your mind on games help you with your school work?
6. How do we know that the ancient Greeks had beautiful, strong bodies?
7. How do we know that they also had splendid minds?
8. What have the ancient Greeks taught modern cities about the value of a "sound mind in a sound body"?

9. Does your city offer any opportunities for outdoor play? Do you enjoy them?
10. What health lesson may young Americans learn from the lives of Washington and Lincoln?
11. If you make some attractive posters to put about your room, they will encourage your classmates to play out-of-doors. These can be made by mounting some bright pictures showing healthy children at play. Under your pictures print interesting mottoes.

CHAPTER IV

OUR CLOTHES AND OUR BODIES

I

IF you want to play any game well, you must be comfortably dressed. That does not mean that you need a special sport suit for every different game you are going to play, like your older brothers and sisters. To them they seem quite an important part of the game; but you wouldn't like all that bother and trouble of changing so often, to say nothing of the expense.

Fortunately for boys and girls at your lucky age, every suit you wear, except on Sundays and on other state occasions, may be a sport suit. That is, your clothes should be loose and comfortable, and strong and tough enough to play in at a moment's notice without any changing, except, perhaps, to throw off your jacket or buckle up your belt. Your shoes should not wear blisters on your toes, and your clothes should not cramp you about the shoulders, nor choke you about the neck with a starched ring like a dog collar, nor be so tight at the knees or so full and heavy in the skirts as to interfere with the free use of your legs.

Nearly all games can be played perfectly well in one comfortable, sensible, inexpensive suit, such, for instance, as the uniforms of the Boy Scouts and of the Girl Scouts; and something like this, of woolen cloth in winter and cotton in summer, is becoming recognized as the proper school suit all over the country.



THE UNIFORM OF
THE BOY SCOUTS
OF AMERICA

You will find an account
of the Boy Scouts in
Chapter XII.

Clothes are a great deal of trouble and expense, both to your patience and to your father's pocketbook, but you simply can't get along without them. They don't need to be of fashionable cut, but they should be of about the same shape as you are, only a little looser at all the "hinges." It isn't the way they fit you, but the way you carry yourself that counts, and, if you hold your head and shoulders back and

keep your face and collar clean and your tie and eyes bright and the dirt dusted off your clothes, you are as well dressed as any one need be.

To begin with your feet — the most important end — you must have shoes to keep your toes from being trodden off in the scrimmages and

to give you a good firm grip on the ground in the line-up and in running and dodging. They should be long enough so that, when you stand up in them and throw your full weight forward, you can't feel the ends of them with your toes, and wide enough so that your little toe barely touches or feels the leather of the side. Your feet must spread like springs when you walk or run, and, if you haven't room enough in your shoes for this, they will soon cripple you.

The army rule about shoes is a good one: "Get them a size too big and then wear an extra pair of socks." Besides, at your age it is necessary to leave a little room for your feet to grow in. For shape nothing is better than the army shoe, and, although they need not be as square-toed as a coal shovel, the inner edge of each shoe should be straight, or nearly so, and not whittled off to form a toothpick point. On the whole, there is nothing like leather for the "uppers" of boots, although canvas is cool and comfortable in the summer-time. For soles, the new "rubberoid" materials are very good, as they give a grip on rocks or grass, and even ice, and are nearly waterproof. They do not "draw" the feet as rubber does.

You will find it most convenient to have at

least two, or, better, three layers of clothing over your body. An outer one, usually of wool, for protection against scrapes and scratches and cold and rain; a middle one to show neatly at the neck



Aloha Camps

SENSIBLE CLOTHES

Clothes like these will give good service on hikes and picnics and in outdoor games.

and cuffs; and an inner one of some soft and porous stuff that can be easily washed, to soak up perspiration and let the outer clothing play easily over it. When you play, you throw off through the skin between one and two pints of watery vapor a day, so that, in order to feel comfortable and keep healthy, it is necessary to take off your undergarments at night and hang them up where they will ventilate well in a current of air. You

should have them washed at least once, and, better, twice a week.

II

THE best single prescription ever given for keeping in perfect health was President Roosevelt's "Get a good sweat every day." This is the best blood purifier you can possibly take. The reason is that with the water that comes steaming up through the skin from hundreds of thousands of tiny tubes or pores, there comes waste from the deeper parts of the body, so that when you perspire you are not only washing your skin from the inside, so to speak, but cleansing your blood as well. This steaming of water goes on all the time, even though you do not notice that you are sweating, and is called the "invisible perspiration."

The thousands of little pores also pour out on the skin a delicate oil, or natural cold cream, to lubricate the skin and keep it smooth and flexible. Notice how oily your skin feels in summertime after a free perspiration, and how dry and rough and tingly it feels in the first raw, northeast wind in early winter, when the cold literally closes up the pores and shrivels up the little perspiration pipes and blood vessels under the skin, and stops the sweat from bubbling out upon the

· surface. If this oil and the body waste together are left too long on the skin, it will soak into your clothing, first into your underwear and then into the lining of your coat and other clothing, and give them a disagreeable, sour, rancid smell, which will not make you popular with other boys and girls, and may even make them object to sitting next to you in school or playing with you. So that, if you don't want to be left out, or left to the last, when sides are chosen, if you want to consider your own health and comfort, if you want to be good at games and make a high standing in athletics, you must bathe like a young sea lion, or splash like a sparrow in the rainwater, and change your underwear often and so keep your clothes from smelling "sweaty." Gymnasiums and athletic clubs and the dressing-rooms of baseball and football teams always have shower baths, so that, when the players come in hot and dripping with perspiration, "all in a lather" as the saying is, they can plunge under them and sluice off all the waste and the outer film of the oil. It isn't necessary to have a nickel-plated shower or a porcelain tub in order to give yourself a bath which will make your skin clean and comfortable when you come back home after a good afternoon's play. Just stand in a washtub with a square of canvas or a

Sunday newspaper spread underneath it, and then take a water-can or half a bucket of water with the chill off, or a little warmer in the winter-time, and pour it slowly over your head and shoulders or get some one to do it for you. Or in the summer-time you can get four or five feet of rubber hose with a sprinkler nozzle and attach it to a faucet in the laundry or woodshed or back porch or barn and have a perfectly good cold shower bath. It is not best to have the water too hot, as this may wash off too much of the natural oil and leave the skin dry and stiff, so that it will chap and crack.

It isn't necessary, of course, to wait until Saturday night for either your bath or your clean clothes; and it is very much better to bathe and change your underwear several times during the week. If your mother is busy with the younger children, you can wash out your own underwear and socks in ten minutes, with a piece of soap and a bowl of hot water, and hang them out in a warm place or in a current of air and they will be dry and clean by morning.

III

THE reason that you use soap in bathing or washing is that oil will not dissolve in water, except to

a small extent if the water is very hot; but it will turn into glycerine and melt away if you mix in a little alkali, either potash or soda. Soap is made of a mixture of fat and alkali, either potash which comes from wood-ashes, or soda which comes from rocks or from seaweed. A properly made soap is something like perspiration in that by its alkali it cleans the surface of your skin or your underwear of rancid oil, but leaves a little of its fat on the skin or in the cloth to keep it soft and flexible.

If a soap lathers too freely, or if it makes your hands feel dry and crackly and uncomfortable after using it, it is too strong; that is to say, it has too much soda or potash in it, and you shouldn't use it for your hands and face. Perhaps some day your mother will show you how to make soap. All you need is a can of lye and some ordinary clean kitchen fat, bacon-grease, or beef or mutton drippings, or, if you want to have it very nice and fine, some olive oil. You mix them and boil them together, and if you want the soap to float you beat air into it with an egg-beater, and then it is great fun to pour the mixture into moulds and watch it set and harden into nice, clean white or cream-colored soap.

You may think that soap is a very cheap and

common thing, but it is extremely necessary for our health and comfort. During the World War the people of the Central Powers, whose country was blockaded by the Allied fleets so that they couldn't get fat enough to eat, and, of course, hadn't any to make soap of, found that they missed soap more than any other single thing. They would eagerly pay four or five dollars for a single cake of soap. Skin diseases of all sorts became very much more common, because the people couldn't keep their skin in comfortable, flexible condition by washing properly.

IV

It is advisable, as I have told you, to wear two or three layers of clothing, because, besides giving comfort and convenience in keeping clean, they give warmth with ventilation to the skin. You say that a thick coat is warmer than a thin one, and that a woolen jacket is warmer than a cotton blouse, though, when you touch them with your finger, each would feel as if it would be equally warm. Clothes in themselves are neither warm nor cold, but they keep you warm by preventing the escape of the heat from your body. It is a curious fact that the best thing to hold in heat, or, in scientific words, "the best non-conductor," is

still air. So that we literally dress ourselves in jackets of air, and the clothes which are warmest to wear are those which are thickest and most spongy, and which therefore hold most air in their mesh, as the pores of a sponge hold water.

It may seem strange to think of being clothed with air, but the great secret of the warmth of any cloth is the amount of air that it will contain. Cotton and linen, for instance, will hardly hold any air at all, while wool holds a good deal of it, and fur or down most of all. This is why we so often use wool for our outer garments, first, because it contains a good deal of air, and, second, because it holds its spongy, porous shape no matter how wet it gets, and doesn't chill us and cling to us as wet cotton or wet linen does.

You will now understand that each layer of clothing holds a jacket of air around our bodies, and that the separate layers hold air between them. There is a layer of air, for instance, between your underwear and your shirt, and another layer between your shirt and your coat. So that, from the point of view of warmth as well as of cleanliness, we need one layer of clothing next to the skin to take up the perspiration and which can be changed and washed easily, an outside layer to keep out the cold and rain, and a

middle layer between them to make the combination hold as much air as possible. Another advantage of having plenty of air mixed with and held in our clothing is that it enables perspiration to escape and gives our skin fresh air to breathe, for our skin needs to breathe just as our lungs do, only, of course, not so actively.

From the point of view of games and play another advantage of several layers of clothing is that we can throw off the outer jacket or coat when we jump into a game, so that there is little to interfere with the escape of the steam which we literally blow off when we are running or catching or wrestling. Then, after a game, we can put a jacket on again before we begin to feel chilly and before our underwear gets clammy or sticky. If we do this, or if we keep on exercising briskly, or walking rapidly, while we are still warm, until we get into the house again, we need have little fear of catching cold after even the hardest and hottest play. On the other hand, it is risky to sit still in clothes soaked in perspiration.

V

THE very best underwear ever invented is our wonderful silky, elastic skin, with its thick net-

work of tiny blood vessels. When we run fast or play hard, this reddens and throws off heat, and when we stop exercising it shrinks and stops the further escape of heat and so allows us to cool off gradually. We never feel chilly after we have once got our skin fresh and healthy by cold bathing or cold splashing every morning, our muscles hard, our heart strong and elastic, and our whole body "in training."

In these days, houses and schools are kept warm in winter from cellar to garret, and all the floors are warm and dry; also we have got into the habit of playing more and spending more time in the open air, so that it is not necessary to wear heavy underwear as people used to think essential, to keep us from catching cold. Good medium-weight underwear of soft, porous, loosely woven or knitted wool-and-cotton mixture, or of fleecy cotton flannel, is enough. If you still feel the cold, or an extraordinarily cold spell comes on, another light, soft, thinner suit may be worn under this. Remember that the more layers you wear, the more air you will hold around your body, the warmer you will be, and the easier your underwear will be to keep clean. When you go out-of-doors in the winter from the furnace-heated house or school, put on a sweater under-

neath your jacket, or a short overcoat over it, and then be your own furnace, by running and romping, or chasing and wrestling, and keeping up your steam-pressure all the time you are out-of-doors. Plenty of play in the open air is the best preventer of colds, and the best protection against winter cold, ever invented. This is especially true if you eat plenty of good "coal" foods to keep up your furnace in winter, bread and butter and milk and meat and buckwheat cakes with syrups and potatoes and apples.

Of course, we must wear thicker outside clothing in winter-time to keep our body heat from slipping through to where it won't do us any good. Winter clothing should always be soft and spongy and rather loosely woven, both so as to hold plenty of air and to be soft and flexible to play in, not hard or heavy or stiff, like a board, as we say. In Canada, where the snow is dry and crisp, and they are fond of tobogganning, skating, and other winter sports, they wear what they call "blanket-coats" of thick soft wool, which keep them warm and yet don't hold in the perspiration.

Another good winter coat is the Mackinaw, or lumberman's jacket. It is woven of tough, rather coarse wool, with a little of the natural oil of the sheep left in it, so that it will shed snow

and turn rain, and yet remain porous and full of air. Another advantage is that it doesn't come too far below the hips. This leaves your legs free for running and skating and wading through the snow.

VI

CLOTHES are a great deal of trouble, but you would be much more uncomfortable without them. Even the animals have to wear clothes of some sort to keep them warm and to protect them against rain and scratches and brambles and underbrush. They haven't so much trouble with their clothes because they grow right on them, so that they don't have to fuss with buttons and strings, and, what is still more convenient, their coats thicken up of their own accord in the fall so as to be warm and nice for winter; no trial to them to put on their winter underwear. Curiously enough, they have found it best to wear two layers of clothing just as we have. An outer coat of long, stiff, usually shiny hairs to protect them from scrapes and scratches, and an undercoat of short, soft, downy or woolly hair to hold as much air as possible in its mesh and keep them warm. It is this inner or undercoat which thickens up in the fall against the winter's cold.

If you will ask any trapper or hunter he will tell you that the coats of mink or otter or muskrat, or any other animals which are caught to make fur coats and tippets out of, have so little of this soft, silky under-fur in the summer-time that their skins are almost worthless. By September these coats are beginning to thicken quite a little, so that the fur is softer and thicker, but it isn't until about Thanksgiving time that their pelts, as the trapper calls them, get into perfect condition. So fine and delicate is the fluff of this under-fur, and so firmly does it hold the air in its mesh, that it is impossible to drive it out even by

*Kodak*

IN THEIR WINTER OVERCOATS

heavy rain. Many animals' overcoats are absolutely waterproof; deer and moose, for instance, in their winter overcoats, will stand for hours in a

driving rain or a melting snow and never get wet through, while muskrats, otters, mink, and particularly seals, swim all day in the water and never get their skins wet.

Although an animal's clothes give him so little trouble in some ways, in others it is a great disadvantage to have them grown on. For one thing he can't throw them off when he is hot; you have, for example, often seen your dog sit and pant and gasp with his tongue hanging out and dripping, trying to cool off after a run. For another thing, and much more serious, he can't take them off and wash them, or even shake them out and air them, and as a result he suffers a great deal from fleas and other parasites, which are extremely difficult to get rid of and often cause serious diseases. Indeed, human beings had just this same trouble until they began to wear underwear, and to change it frequently and wash it, and particularly to change their clothing at night. There was a time when nightgowns were not in common use; and you can imagine how unhealthy it must have been to wear the same clothing next the skin, day and night. One of the most serious and deadly diseases all over the world used to be typhus fever, which after the World War raged furiously all over Russia and eastern Europe. It

was spread by the bite of lice, and the only thing needed to avoid it is changing and washing our underwear frequently. It is now seldom seen in the United States and in Western Europe.

QUESTIONS AND PROJECTS

1. What kind of clothes are best for school and play?
2. In choosing your school shoes what good points should you keep in mind?
3. How many layers of clothing should you wear? Of what value is each layer?
4. When you perspire freely, what service are you doing your body?
5. Why should we bathe and change our clothes frequently? Make this one of your health rules.
6. Why do we use soap for bathing and washing?
7. What would happen if we were unable to get soap?
8. Why are several layers of light clothing better than one heavy layer?
9. What kinds of materials make the warmest clothing? Why?
10. The best way to keep warm out-of-doors is not the wearing of heavy clothing. What is it?
11. How does Nature provide the animals with winter clothing?
12. What are some of the disadvantages in having your clothing attached to you like that of the animals?
13. Did you find a new health rule in this chapter?

CHAPTER V

THE SECRET OF SPEED AND STRENGTH

I

ONE reason why all games are good is that they make your heart grow. It has been found by actual X-ray pictures that as a rule the hearts of athletes grow visibly larger during training. And it is perhaps more interesting that, in the few cases in which an athlete's heart does not grow bigger under such exercise, he does not win in the race or high jump or other sports in which he contests. When you get a larger heart, you can pump larger amounts of liquid food or blood into your muscles and bones all over your body, and feed them better and make them grow. Of course, also, more blood can be driven through the lungs where it is purified of its waste gases. Thus you become a better athlete by having a better heart.

During the World War it was found that our American soldier boys, while they were being trained in the camps, gained, on an average, something like twelve pounds in weight, nearly all of this being muscle. They grew, also, nearly

two inches round the chest. This means that by regular exercise and training they increase the power of their lungs and of their hearts. So, if you want to grow big and strong in the surest and



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fastest way, play hard at all sorts of games, bathe often, and keep out-of-doors as much as you can, so that your lungs may be full of pure air most of the time.

Years ago, when school children first began to go into training for sports, we used to think that, in order to win the prize in any particular entry, a boy or girl must practice all the time at that particular feat and nothing else. We used to think that basket-ball players must play nothing but

basket-ball, and a high jumper do nothing but run and jump, and the sprinters run just as fast as they could for their chosen distance. But Dr. Dudley Sargent, the famous Physical Director at Harvard, found a very curious thing — that when a school athlete had trained down to say



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AN OUTDOOR GYMNASIUM

fourteen seconds for the hundred-yard dash, or four and a half feet for the high jump, he would come to a stop and not be able to improve any further. Then, if for the time being he were forbidden to jump any more, and instead took a “loosening-up” course of all-round exercises —

pulley-weights, horizontal bar, rowing, wrestling, and so on — calling into play all the other muscles of the body that were not especially used in running or jumping, after a week or so he could again go back to his specialty and improve his record. In other words, you must train the heart and all the muscles of the whole body, as well as the nerves which balance and hold them together and help them to do good smooth team-work, if you want to succeed at any particular feat.

II

You all probably know what it feels like to be “out of breath,” or short of wind. You gasp like a fish out of water and puff like a steam engine, and your heart beats so fast and hard that it pounds against the side of your chest and fairly makes your head ring.

It is not an agreeable feeling, for you feel as if you were never going to get your breath back. It comes on only after you have run too far at top speed, or skipped the rope too many hundred times, or wrestled or scuffled too hard. It is Nature's warning to quit, and means that you have raced your body-engine so fast that it has thrown more air into the exhaust than your heart fan and lung bellows can blow out. They both work

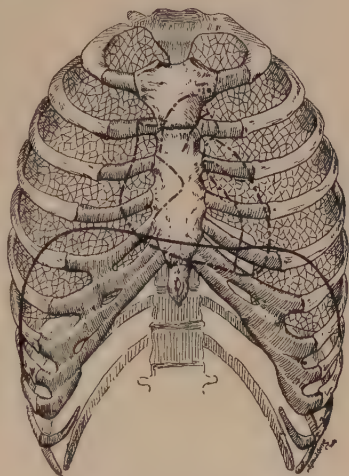
as hard as they can, but they can't keep up for a great while; and in a few minutes you just choke up, and can't go on any longer.

You are especially liable to get out of breath when in the spring you first start out to run races around the block, or to skip the rope, or when you begin baseball practice, because for some months past you have not been doing any of these things, and so are "out of training." Then, as you keep at it day after day, you find that you can go longer and farther without getting short of wind, until finally you can run the whole distance at good speed without turning a hair. This is because day by day your heart and your lungs have been growing a little larger and a little stronger, until finally they can pump blood and air fast enough for you to keep up pretty violent exercise for any reasonable time.

For example, if you do any cross-country running, such as hare and hounds, you will perhaps find that, after two or three minutes from the start, you will begin to breathe hard; but if you keep on running you will get what is called your "second wind." You will begin to breathe easily again, and be able to go right on through the race without further trouble.

This is partly because your heart is hollow and

elastic; and when you are just walking or moving about quietly, without any special demand upon it or upon your muscles or your lungs, it shrinks a little, and works quietly. After you begin to run, it takes two or three minutes for your heart to get warmed up to its work and to expand so that it can take in and drive out larger shots of blood at each stroke of the pump, and thus keep the racing muscles and lungs well supplied for their great exertion.



THE CHEST THAT HOLDS THE LUNGS

III

IF you want to make good in your favorite game, there are two or

three rules which it is important to bear in mind. First of all, when you are beginning to go in for it, don't be in too great a hurry to become a champion. Practice regularly, but not too long at a time. Just as soon as you begin to feel uncomfortably short of breath, go

Back of the lungs is the heart; its position is shown by the broken line. The black line across the chest shows how high the diaphragm rises when we breathe out quietly. When exercising, we breathe harder and the diaphragm rises higher.

slow, or stop altogether and rest for a little while. If you don't, you may strain your heart in such a way that it will take weeks of care and gentle exercise to repair it. The best motto is, "Stop short of getting overtired." If you take care to do this, you will soon find that your heart will begin to build up gradually; and you will be surprised how much farther and faster and more easily you can run.

The second rule to remember is never to start any game or race without taking two or three short "warming-up" runs, or dancing about and swinging your arms around, so as to start your heart expanding and to get your muscles and lungs ready for an extra effort. There is not only danger of straining your heart by too sudden and violent an effort, but you may lame or even partly tear one of your muscles if you make some sudden violent movement without being warmed up.

QUESTIONS AND PROJECTS

1. What does exercise do to your heart? Why is this good for it?
2. If you wish to specialize in a particular sport, what is the best way to train for it? Why?
3. What causes us to become out of breath?
4. Why should we always heed that signal?
5. How can you improve your breathing so that you

will be able to play hard at any game without becoming short of breath?

6. What rule should you keep in mind when you start training for a sport or game?
7. What is meant by "warming-up" exercises?
8. Test your speed and endurance by running races with your classmates, in the school yard.

CHAPTER VI

THE BEST WAY TO TRAIN, AND WHY

I

ALL trainers of horses, when they are preparing them for races or long journeys, are careful to begin slowly, with comparatively short runs or low jumps at first, gradually making them longer and harder as the colts get stronger and tougher. The reason is that this builds up the heart gradually to strength which will last. A less careful plan would certainly strain the heart and never allow the colt to come to his full strength or speed. The Arabs, who for more than two thousand years have bred the fastest, the most tireless, and also the most beautiful horses in the world, begin practicing their colts in little play races when they are only about six months old, gradually giving them longer and stiffer gallops, month after month, until at four years old they are fit, as they say, to carry a man who has to ride for his life.

This slow and most careful system of gentle training has been the main secret of the marvelous reputation of the Arab horses. Though our

own thoroughbreds and trotters can beat them at short distances, no other breed can stay with the Arabs on a long, fast journey, as was clearly proved in the United States Army endurance race for weight-carrying cavalry horses. Of twelve entries, in the three-hundred-mile race from Fort Ethan Allen, in Vermont, to Camp Devens, in Massachusetts, covering five days, three were Arabs, and all the others famous champions, Morgans, Kentucky saddlers, English thoroughbreds, and so on. But

not only did an Arab win, but all three of the Arabs arrived at the finish in perfect condition from three to six hours before any other horse of any other breed put in an appearance!

The Arab sheiks have a saying that, when



Kodak

TRAINING AN ARMY HORSE

Jumping obstacles strengthens his legs and improves his wind.

starting out on a long hard journey, gallop your horse gently until he begins to sweat, then walk him until he is dry, and repeat this until he has sweated and dried three times. Then he will be "ready to ride to the moon." A similar rule will be not at all a bad one for you to follow, yourself, in preparing for an all-day or all-afternoon hike.

The animals themselves seem to understand something of this system of slow and gradual training. A mother bear will box and scuffle with her cubs and pretend to bite them, while they are just little balls of fur and growls. As they grow bigger week after week, she puts more "ginger" into the performance, until they learn to twist and trip and hang on with their teeth, and give and take a pretty hard blow without whimpering. Thus she trains them how to fight for their lives when they are grown up. She takes them down to the river or lake to drink and bathe, and sometimes gives them a little push into water beyond their depth, so as to make them learn to swim, of course, fishing them out at once if they get into trouble and cannot keep their heads above water.

Mother seals will take the baby seals after they have grown their bathing suits, get them up on their shoulders, and swim out with them

gently, a little way from the beach, and then sink down and slip out from under and let them swim back, keeping close alongside, of course, in case of danger. In fact, a great deal of the play of young animals among themselves, scuffling and racing and tree-climbing and chasing one another, is in the nature of playground games and gymnasium training for the kind of things they will have to do in order to earn their living and to save their lives when they grow up.

II

BUILDING up the heart is one of the greatest secrets of both speed and endurance. Not only have athletes larger hearts than average men, but animals which are famous for their speed and long-windedness, like the horse and the deer and the antelope, have much larger hearts than slower and less speedy animals. A thoroughbred race-horse, for instance, which weighs only nine hundred or one thousand pounds, will have a larger heart than that of a great dray-horse or draft-horse which weighs from eighteen hundred to two thousand pounds. The fleet and graceful deer has nearly twice as large a heart as a sheep or a calf of the same weight.

Birds that do not fly very often or very far at a

time, but spend most of their time walking about and scratching in the ground, such as chickens and turkeys and partridges, have much smaller hearts in proportion to their bodies than birds that have to fly in order to catch their food, and so are on the wing most of the time, such as pigeons and hawks and swallows. Even in the same species of birds the rule holds, and wild mallard ducks have larger hearts than tame ducks; and if wild mallards are caught and tamed, their hearts become smaller and softer like those of the tame ducks.

The largest heart in the world, in proportion to the size of the body that holds it, is that of the humming-bird, which makes his tiny wings whir so fast that you see only a sort of blur all around his body. This bird is a little dynamo in feathers, and actually has greater power for his weight than a Liberty motor. His heart is so strong that he can keep up his electric-fan performance all day long, as he whizzes from flower to flower for his food.

III

NOT only does your heart muscle and the muscles of your legs and chest and arms and back grow larger and stronger with exercise, but those peo-

ple who have plenty of open space to run and race and play in, and who take a great deal of exercise while they are young, actually grow taller and bigger, as well as stronger, than those who have not the same chances. It has frequently been noted by naturalists that animals which live and grow up on small islands, especially rocky and hilly ones, where they have no wide, level, open spaces, are likely to be stunted in their



Narragansett Machine Co.

YOUR MUSCLES GROW LARGER AND
STRONGER WITH EXERCISE

growth and smaller than the same kind of animals that live on the mainland with broad level meadows and fields. The best instance of this is the famous Shetland ponies, which come from a group of small, rocky, barren islands northeast of Scotland, and are believed to be descended from the same stock as the large, full-sized horses of the mainland. In the same way, children who are born and grow up in the most crowded and built-

up parts of our great cities, where the streets are full of drays and wagons and trucks all day long, so that they have no proper place to play and race and romp about, grow up shorter and smaller and less healthy than they would have done if



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RUNNING RACES HELP GIRLS GROW
STRONG

they had been fortunate enough to live out in the suburbs, or in country towns, or in the open country. Play builds our bodies for life; but, as I have warned you on

another page, the rule to follow is, do everything gradually, without getting too tired, in order that you may build your strength in a way to make it last.

Just as you cannot grow to be tall and strong merely by making up your mind to, but must also take plenty of exercise in the open air, so must you do something more than play good healthy games out-of-doors. This second thing is to eat plenty of "growing" foods, such as your play will give you an appetite for. Perhaps the most striking instance of the effect of plenty of

food upon growth is to be found in the pine trees.

In gathering pine cones for seed to plant in their nurseries, nurserymen used to find great difficulty in getting a full supply of them, because they grow only toward the tops of the trees; and, as these may be anywhere from twenty to a hundred feet high, it was no easy



Kodak

MILK IS ONE OF THE BEST "GROW-
ING" FOODS

task to pick them. So, to save labor, the nurserymen went into barren, sandy regions where the pine trees were only dwarfs, not more than six feet high, but covered all over with little cones. These they gathered and planted in richer soil, and gave them plenty of "growing-food." To their delight, they found the little trees which sprouted from these cones grew right on up toward the sky into fifty, sixty, and eighty-foot pine trees, just as if they had been picked from real monarchs of the forest. Good food and good soil made all the difference between trees no higher than Christmas trees and splendid big ones as tall as a ship's masts.

Nearly all kinds of food are good to keep you strong and healthy — bread and butter, milk, meat, sugar, potatoes, vegetables, and fruits. But just lately we have found that there are some



VEGETABLES

Supply salts and acids to build bones and tissues.

Provide iron for the blood.

Help to overcome constipation.

Every Day.

EAT A FRESH VEGETABLE

foods which are extra good to make you grow, because they have in them what are known as the "life essences," called by the rather hard name of "vitamins." The foods which have most of these vitamins in them are butter, milk, eggs, oranges, tomatoes, carrots, and spinach. Smaller amounts of these growth

vitamins are also found in brown or whole-wheat bread, good old-fashioned cereals, like cracked wheat or oatmeal, in apples, and in the fat of beef and mutton and pork, bacon and ham.

If you drink at least two and, better still, three or four glasses of milk a day, either with your

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meals, or in the middle of the morning or afternoon, and take plenty of butter on your bread and potatoes, and eat either tomatoes or carrots or spinach three or four times a week, and oranges and apples whenever you can get them, you will not only keep yourself healthy and well, but will really increase your chances of growing taller and stronger than you would have done without these foods. This has already been proved by whole nations; for instance, the Japanese, whose chief foods, rice and fish, are very poor in these growth vitamins, but who have grown on an average nearly two inches taller and ten to fifteen pounds heavier by the age of sixteen since they began eating wheat bread and butter and



BALANCE YOUR MEALS
EAT SOMETHING FROM EACH GROUP
CEREALS - bread, macaroni, rice, oat-meal and other breakfast foods.
FATS - butter, cream, olive or other oil, meat fat.
VEGETABLES and FRUITS - at least one of each everyday.
PROTEIN FOODS - meat, eggs, cheese, fish, dried beans and peas.
LET MILK BE THE BALANCE WHEEL
USE SWEETS SPARINGLY

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eggs and beef and pork and apples. Immigrants who come to this country while they are little children often grow an inch and a half or two inches taller, and ten to twenty pounds heavier, by the time they are fourteen than the average of children of that age in the town or country in Europe from which they came, because in America wholesome food is easier to get.

QUESTIONS AND PROJECTS

1. How do the Arabians train their horses? What is the result of this kind of training?
2. Can you apply this lesson to yourself?
3. How do the animals train their young? Have you ever seen a dog training her puppies?
4. Does the size of your heart affect your endurance? How do the animals show this to be true?
5. Does out-of-door exercise influence a child's growth? How has this been proven?
6. What besides exercise is necessary to make you grow?
7. Make a list of the growing foods.
8. Plan some model lunches that will contain the right kinds of food for a boy or girl who wants to grow tall and strong.
9. Add to your play posters a group telling your class about the growing foods.
10. Why should American children be taller and stronger than those of some other countries?

CHAPTER VII

WHY SWIMMING IS GOOD FOR US

I

To grow strong and long-winded, you must give every single muscle of your body plenty of work to do; not merely one kind of work, but as many different kinds as you can possibly find for it. You must make your muscles able to pull up and down, backward and forward, crossways and slantwise; and until you do this you will never know what possibilities of strength and growth your muscles really have. The reason for this is that our muscles are not single strips or cords, like a rubber band or a leather strap, but springy, elastic bundles of fiber — from five to twenty strands to a bundle — something like a wire cable or a rope, only not twisted.

Some of our muscles are long like a rope; some are spindle-shaped, tapering off at each end; many others are triangular and fastened on to a wide surface of bone at one end, like the great muscle which caps the shoulder and covers over the shoulder joint. Other muscles are nearly square, and run from a strip several inches long on

one bone to a similar strip on another. Some are fan-shaped, some star-shaped, some the shape of an ice-cream cone, and so on. This is in order that every single one of our muscles may be made to pull in from a half a dozen different directions. They can do this because the fibers in each muscle run, not all in one same direction, but some lengthwise, others crosswise, and still others slantwise across the bundle of which they are a part. So if you exercise a muscle in only one direction, only straight up and down or only backward and forward, for instance, only one set of these bands or fibers of the muscle will be used and developed.

The muscle in your body whose name you are most likely to know, because it is the one that you invite your friends to feel, just to see "how much muscle" you have, is the "biceps" on the front of your upper arm. If you want to make this muscle, for instance, grow to the greatest possible size and strength, you must not only give it plenty of such exercise as work with the pulley-weights in a gymnasium or chinning yourself on the horizontal bar; you must also put it through such movements as you get in swinging Indian clubs, drilling with the wand, throwing the javelin, striking with a hockey club or with

a baseball bat, swinging from the rings and the overhead ladder, fencing and boxing. In that way you will gradually build up all the different strands of the muscle to their full size and strength.

Most of the muscles in our bodies are double-acting; they will pull from either end. The biceps, for instance, when pulling from its "head" on the shoulder will enable you to bend the elbow, as in picking up a ball or lifting a cup or spoon to your lips. Or it will pull from its "hitch" or *attachment*, as its end on the bone of the forearm is called, and allow you to lift your body from the ground by drawing yourself up on the horizontal bar or the limb of a tree. You will probably remember, the first time that you tried to "chin yourself," how few times you could do it without tiring your biceps out completely, even though it already was in fairly hard condition before; and how quickly you improved with practice when you once got the muscle bands accustomed to working.

II

It is perhaps hardly surprising that in your body there are whole groups of muscles which get scarcely any exercise at all in the common work

and play of everyday life. So that if you can find games or exercises which will use these muscles and make them grow, you will have done a very valuable and healthful thing toward increasing their size and building up your strength.



Community Service

THE "SWIMMING-HOLE"

There are two sports which have especial fitness for building up these unused and neglected or half-forgotten muscle groups. These are swimming and skating.

You can tell that these sports call on little-used groups of muscles, particularly in the legs and

sides and back, because you feel sore all over and stiff when you try to walk the day after your first day's skating in the early winter or your first swim in the summer. These muscles had had so little regular work to do that they had become soft and lazy, and when they were really given exercise they got so tired that it actually hurt. Bringing these idle muscles back into use turns them from drones in the body-hive into workers, and helps to build up and strengthen the body just as getting idle men or lazy boys to work builds up and helps to support the community.

You must, however, be on your guard against one danger, which is working or straining these little-used muscles too hard at the beginning. If you do, you may throw them into a sort of spasm, called a "cramp," which is not only very painful, but sometimes quite dangerous, particularly in swimming. One of the most dangerous accidents that can happen to you in swimming in deep water is to be "taken with a cramp." This means that some of the muscles of your body have been overworked or used so heavily in some way to which they are not accustomed that they have "gone on a strike," so to speak. This, either by holding it stiff or by drawing it up into a hard

knot, prevents you from using the arm or leg, and may interfere so much with your swimming as to put you in danger of drowning.

One of the most serious forms of cramp is a spasm of the great muscles of the abdomen, which run down the front of your body from your lower ribs and the lower end of your breast-bone to the girdle-bone of the hips. These muscles are worked very hard in swimming, helping to pull the legs up toward the body for the ordinary or frog stroke, and to hold the body stiff as a purchase or fulcrum for the scissors stroke and the crawl. And, if they go into cramps, they may make swimming impossible, and even pull your head under water.

It is well for you to know all about cramps in the water, because they can be avoided by being careful not to swim too hard or too far for the first four or five times that you go in swimming at the beginning of a season. Only tired muscles, or those poisoned by impurities in the blood, will go into cramps; which means that you should not only go easily and quietly until you get comfortably into your stride each summer, but that you should never go into deep water when you are feeling very tired or when you have a headache or a stomach-ache. Going in swimming too

soon after a meal and before digestion has had a chance to get well started will make you more liable to have cramps.

III

IF you are careful about not straining the muscles or going into the deep water when you are tired, you will very seldom have cramps. Even if you should be taken with one, if you keep cool, you will be able to reach the shore or a raft or keep yourself afloat until help comes. If the cramp is in a leg or an arm, set your teeth and pay just as little attention to it as you can. Call for help, and keep right on swimming with your other leg or arm until you can get back to shallow water. Very often the cramp will die out of its own accord within a few minutes after you stop using the limb. If it is in your abdomen, do the best you possibly can to turn over on your back and keep yourself afloat with your arms. Do not try to use the legs, as this will make the cramp worse. If the water is not too cold, the cramp will sometimes stop of its own accord when the muscles are put to rest in this way.

The very fact that muscles go into a spasm in this way when they are called upon for extra work shows that they have not been getting

enough exercise to become really healthy and to grow. So here is a plain object lesson that, if you bring them into active condition gradually, you will find that they will not fail you when you need them most.

This is particularly true of the great muscles of the front of the abdomen, which do not get anything like enough exercise in ordinary indoor work, or in walking or running or in the ordinary games. In fact, almost the only exercises in which they get real work to do are in climbing, either stairs or hills or trees, and circling the bar

in the gymnasium, and heaving with a shovel or spade or fork.

These muscles of the abdomen have a great deal to do with supporting the bow-



Community Service

SWIMMING BUILDS HEALTH

els and helping in their movements, and the lack of proper exercise for them is one of the reasons why constipation is so common and troublesome. Swimming and the work that I have mentioned as good training before swimming not only build up and strengthen these muscles, but

are very good for your digestion and general health as well.

IV

THE other danger that you should be on guard against while swimming is getting chilled from staying too long in the water. It is not alone the coldness of the water that hurts you, but the staying in so long that you get chilled through and begin to shiver. The cold of the water, in fact, does you good, braces you up and stimulates you, providing you do not overdo it. You can plunge in when the water is quite cold, keep splashing vigorously while you are in, and hop right out again before you begin to feel chilly; and this will do you good rather than harm.



Narragansett Machine Co.

A SUN-BATH ON THE BEACH

Just the moment, however, that your finger

nails begin to turn blue or purplish or your teeth start to chatter, out you come and run on the beach or sit in the sun or bury yourself in the warm sand, or throw a coat or blanket around your shoulders. The reason why you get chilled so quickly in the water, even though you are working hard with your muscles which usually warms you up, is that water is a very good conductor of heat, while air is a very poor one; and your body and skin are adjusted to keep or hold in enough of your own heat to keep you warm, with the assistance of clothing, while you are surrounded by air, but they are not adjusted to do so while you are in the water. The reason, of course, is that your natural element is air, not water.

So that if you stay in water too long the cold numbs your nerves and stiffens your muscles and weakens your heart, and instead of being able to swim you will sink like a stone. But you can be very seriously injured even if you do not sink. The intense cold of the water will actually chill your heart until it can no longer bear it. Many shipwrecked persons are drowned, not because they sink, but because they are overcome by the cold while they are floating on the surface, even when held up by life-belts.

Do not think, therefore, that it is just fussiness that makes your teacher or swimming instructor, or your father or mother, insist so strongly that you must come right out of the water the moment you begin to feel chilled. You will get a great deal more fun out of your dip if you come out early and often and warm up by racing along the beach or basking in the sun. On the other hand, you may do yourself a serious injury by staying in until you are blue and shivering, with goose-flesh all over you.

V

SWIMMING not only gives valuable exercise and training to the muscles of the front of your chest, particularly in the frog or breast stroke, and to the muscles of your abdomen, but it rests and takes the strain off the muscles of the back. Your back muscles are under constant strain all day long, even when you are sitting down, with no let-up or rest, holding the body erect and balancing it. This is why the largest and strongest bands and masses of muscles are in the small of the back, running from the hips along both sides of the backbone.

Whenever you sit down, your legs get a rest; the muscles of your arms are used scarcely more

than a fourth of the time that you are awake, but the muscles of your back never get any rest at all until you go to bed at night. This constant strain of holding our bodies in the erect position is very tiring. Backache is, next to headache, perhaps the commonest pain in the world. The best way to escape it is to build up strong back muscles, which swimming helps you to do. A strong back is a valuable possession.

The change to the animal or horizontal position in swimming is helpful in another way also. Our liver and stomach and intestines do not lie loose in our body cavity, but are slung up to the front of our backbone by loops of very thin and fine but very tough tissue, looking a little bit like oiled silk. They are fastened up somewhat as ears of seed-corn are hung from the stalk by their husks. If you take hold of a stalk along which ears of corn are hung and stand it straight up on end, all the ears will slump down on top of one another.

This sagging down and piling up on top of one another is just what happens to our stomach and intestines when we are standing or sitting. But when you throw yourself on your face in the water and begin to swim, all these coils of intestine swing forward into their natural position and

hang loose and comfortable and clear of one another, so that it is much easier for the blood to circulate and for the food to pass through them. Since all these organs are really muscles, any such help that we can give them in doing their proper work means greater health for our whole body. And the same benefit can be got from turning over on your face and going through the motions of swimming in your morning tub.

VI

LAST, but by no means least, of the great charms and advantages of swimming is the beautifully cool, fresh feeling which the cold water gives to the skin all over your body. It makes you gasp with delight and take a big breath every time you splash into it, and then shout just from the sheer joy of being alive. All of which is extremely good for both your lungs and your heart.

One reason why the splash and tingle of the water on our skin is so good for it, in a shower bath or a tub, but by far best in swimming, is that the splash and bubble of the water upon the blood vessels of the skin drive the blood back to the heart and at the same time suck fresh blood out of the deeper parts of the body. So that the blood vessels of the skin can act as a sort of assist-

ant heart; indeed, they have sometimes been called our "skin heart." This is particularly true of salt water, in which you can actually feel your skin tingle and glow.

The blood in your veins is salty like the seawater, and has almost exactly the same kinds of salt in it. Our bodies may be called walking salt-water aquariums in which all the different cells live and swim like so many little jellyfish.

Every one knows that it is easier to float and to swim in salt water than it is in fresh, because the salt water is denser and gives more support to our bodies. If you want to see how it does this, take an egg and a bowl of water and some salt, and, if you keep on putting salt into the water, you will soon get it so dense that the egg will float in it. About three teaspoonfuls to a tumblerful of water will usually be enough.

QUESTIONS AND PROJECTS

1. How should one exercise in order to work all of one's muscles?
2. What is the peculiar thing about the muscles that makes this necessary?
3. How do your bicep muscles illustrate this?
4. What sports are best for all-round exercise? Why?
5. What causes a swimmer to have cramps?
6. How can they be avoided?

7. What should you do if you are taken with an attack while in deep water?
8. Which muscles benefit most from swimming? Why do they need to be strong?
9. Why is it unwise to remain in the water until you become chilled?
10. What is the work that our back muscles do?
11. How does swimming relieve and rest them?
12. Why is the contact with cool water good for you?

CHAPTER VIII

HOW TO SWIM

I

As I have told you, changing the form of exercise now and then is the best way to build up all your muscles. Living as we do so much of our time on dry land, pushing ourselves about through the air, it is not only very healthful and strengthening, but also very pleasant, to plunge into another element, water, which is solid enough to float us and bear us up, so that we can get something the same sort of exercise which birds get when they are flying in the air.

Whether in the swimming-hole in the creek, or in the big river, or in the clear lake, or in the blue salt sea, never do the boys and girls in a summer camp fail to hear the councillor shout: "All in for a dip." They may sometimes be a little late to classes, late to drill, even late to meals, but they are never tardy at swimming-time. A dive from the springboard into the crispy salt or sparkling fresh water is a joy and a thrill no boy or girl who knows how to swim would ever miss if he could help it. Sliding down the chutes, bask-

ing in the hot summer sun, and performing all kinds of diving and swimming stunts make the water the best of all places for our physical exercise in the summer-time.



Aloha Camps

"ALL IN FOR A DIP"

We all want to know how to swim. Partly because we feel entirely "out of it" unless we do; partly because it makes the others wonder what can be the matter with us; and last, but not least, because knowing how to swim may sometime enable us to save our own lives or rescue some one else from drowning.

Swimming is the sport in which the fat boy and the plump girl have an advantage. They may

have been called "fatty" or "tubby" or "dump-ling," but when the swimming season comes around they are regular ducks and porpoises. Their comfortable coating of fat makes a nice warm blanket against the cold of the water, so that they do not get chilled nearly so quickly as the boys and girls who are thin.

Women and girls are usually better long-distance swimmers than men on account of their better protection of fat over their muscles and their smoother, rounder, and more graceful outlines which allow them to glide through the water like a seal. Here, then, is a sport where the girls have a chance to lead the boys.

II.

WHEN it comes to swimming, the animals have the advantage of us, for nearly all of them swim naturally: a dog, a horse, a rabbit, a squirrel, or even a cat will swim a stream if they are put to it. Some of them can swim quite long distances, and seem to enjoy it.

One summer, when I was on a fishing trip in the Maine woods, I was paddling along quietly up a stream about fifty yards wide which connected two lakes. My Indian guide in the stern shouted to me; and I looked up, and there was a

little black head moving rapidly along the surface of the water about twenty feet ahead of us, evidently trying to swim across the stream. We both dug in our paddles and dashed forward to see what it was, thinking, perhaps, it was a snake. When we got closer, we saw it was a little red squirrel paddling away for dear life. The canoe soon shot alongside of him, and thinking, perhaps, he might be tired, I laid my paddle flat on the surface of the water and pushed it toward him. Instantly he climbed right onto it, ran up the handle of it, up my arm, across my shoulders, down the other arm, and splash over into the water again on the other side, where he went on swimming again full clip just as if nothing had happened and no great canoe with strange wild animals in it had come across his course. My Indian roared with laughter and wanted to know, "Why you no catch him?" We both sat and watched him till he reached the other shore, scrambled up a log, shook himself, and disappeared into the woods.

Now that squirrel's legs were making exactly the same kind of movements all the way across that stream, up my paddle and arm, and across my shoulders, and down into the water again on the other side. That is why all animals can swim

naturally, because all they have to do is to keep their legs making the same movement in the water as they do on land. But we, unfortunately, instead of fore legs and paws have arms and hands which can reach far above our heads. And when we fall into the water, instead of using our fore paws as if we were running, which would keep us afloat and make us swim beautifully, we go to clutching into the air as if we were trying to climb a tree and reaching for the next branch, and down goes our head and we get a mouth full of water. If we could only remember to imitate the animals and keep our hands paddling as fast as we like, but never lifting them above the level of our chins, we, too, should swim without any trouble.

III

THE stroke known as the "dog-paddle," which animals use by instinct, is the simplest and easiest way of learning to swim. Watch how your dog swims with his fore feet as he is bringing back a stick which you have thrown into the water for him, and you will get the idea. Then just launch yourself fearlessly into the water and move your arms and legs fairly rapidly just as if you were trying to climb on all fours rather quickly up a

steep bank. You need not be a bit afraid of sinking, for, as long as you keep your arms and legs, or even only your arms, going, you will float.

Of course, you must try this at the beginning only in shallow water — but not too shallow — say about six inches

above your waist; otherwise your feet or even your knees will strike bottom and throw you out of your stroke. If you can get some one to walk alongside of you and just hold

his hand lightly under your chin, so that you may feel sure of not “foundering by the head,” until you get the hang of it and learn what it feels like to keep afloat, it will be a help. But even this is not necessary.

One thing, however, you must remember above everything else, NEVER GO IN SWIMMING ALONE! — not even after you have learned to swim and think you know the water thoroughly. The bottoms of all streams, and even lakes and ponds, are constantly shifting, almost as rapidly as snow



Girl Scouts

LEARN TO SWIM BEFORE YOU GO
CANOEING

drifts in a blizzard. And the patch that was as smooth as a floor and not more than four feet under water last week, or even yesterday, may be a hole ten feet deep to-day. In the sea there are undertows and tidal currents to sweep you off your feet, and sudden swirls of icy cold water running in which will chill you like a blast of cold wind.



Kodak

ONE OF THE FINEST SPORTS IN THE WORLD

Learn to swim first; then learn to sail a boat.

Always go in swimming with a group of your friends (and *be sure* that at least two or three of the older ones know how to swim), or else go in where you are in plain sight and in easy calling

distance of other people near the edge of the water. Two thirds of the drowning accidents that happen in the summer-time come from going into the water alone, or with only one or two others, none of whom knows how to swim.

Another thing to remember, if you live in or near a city or a manufacturing town, is not to go in bathing within five hundred yards of the mouth of a sewer or the waste-pipe from a factory. If you do, you run the risk of getting all sorts of filth and nastiness into your eyes, your ears, and even your mouth, because many of these things float as a scum along the surface. You may even get the germs of disease in this way, and many cases of inflammation of the eyes and ears have been reported from swimming in sewage-scummed water.

IV

WHEN you have paddled your way into confidence and feel at home in the water, and have learned how easy it is to keep afloat, you can graduate from the paddle to the breast stroke. You lie on your face, shoot both arms out both together straight forward, fling them as wide apart as you possibly can, then back to the sides again, and repeat. At the same time you draw

up both your legs under you and kick them back both together as hard as you can, alternating with your arm stroke, so that when your arms are falling back to your sides again the kick of your legs drives your body forward. This is a stroke which only human beings use, since, although it is sometimes called the "frog stroke," this applies really only to the hind legs, as the arms of the frog are held motionless down by his side and are only used to help him steer. The next time you hear a frog go "plop" into the water as you are walking along the bank of a stream or a pond, watch him as he swims away and you will see how your legs ought to move.

The breast stroke is a very useful all-round stroke, especially for keeping afloat for long periods or for long-distance swimming. It is also a splendid developer of the chest and arm muscles. But when it comes to style and speed, it cannot compare with the more modern strokes. After you have once fairly mastered it, therefore, you need not spend much time on it, but pass on quickly to the others.

V

THERE are two styles which we all ought to learn, the Australian crawl, or surf swimming, and the

trudgeon. Both are fast and really not difficult to learn for any boy or girl who will stick to it and work hard.

In the Australian crawl, or surf swimming, the arms, instead of being kept under the water all the time as in the paddle and in the breast stroke, are lifted completely out of the water, one at a time, each whirled forward through the air as far forward as it can possibly reach, and brought down on the water with a "swat" as if you were trying to kill a jellyfish. It is then pulled in under the body while the other arm makes its "swat." Naturally the legs cannot be whirled out of the water in this fashion, so they are worked without reference to the arms at all.

Instead of kicking, as in the breast stroke, or running, as in the dog-paddle, the knees are held perfectly straight, and the legs moved rapidly straight up and down, jointing from the hips, so that the feet move past one another alternately over a range of twelve or fourteen inches. You will have to do this without any model or any comparison, for there is no other movement on earth like it. The nearest one can, perhaps, come to it is to say that you move your whole legs somewhat as you move your hands in the dog-paddle.

In this stroke you lie on your side in the water, whichever one comes most natural to you, usually for a right-handed swimmer the right side. Now comes one of the most puzzling and characteristic parts of the stroke; instead of holding your face up above the water, you let the top of your head plough through the water, so that nearly two thirds of your face is buried. Then, about every third or fourth stroke, you lift your face out of the water with a twist of your neck, draw a big breath, and then plunge under again. In order to fill your lungs full in the shortest time possible, you breathe in through your mouth, and then slowly bubble it out again through your nose as you plough through the water.

The advantages of the Australian crawl are that it is not only very fast and a very showy, pleasing stroke to watch, but that, if you are swimming in surf or in a heavy sea, or rough water of any sort, you drive right through and under the waves like a submarine, instead of having to fight their full force, as in breast swimming, and every now and again getting the crest of one in your face or halfway down your throat before you know it.

The trudgeon or scissors stroke is very much like the Australian crawl except in the leg move-

ments. Here again the legs are held stiff and moved all in one piece. Instead of being lifted rapidly up and down, they are spread wide apart and then "swished" together as swiftly and strongly as possible. They move, in fact, just like the blades of a pair of scissors held parallel with the surface of the water.

VI

AFTER you have mastered one or the other of these strokes, so that it drives you smoothly and easily through the water, you will begin to want to try out your speed in races with the other boys and girls. Then, if you show real speed you may, perhaps, enter in some of the water events at a field meet or in a swimming carnival. The most important step is first to perfect your stroke thoroughly before you enter a race. To race before the stroke is mastered will often force you into poor racing form, and a mixture of strokes, which is not only clumsy but ineffective. When you are ready to race, remember that the most important thing is to get a good start. Many good swimmers lose the race right at the crack of the pistol because they fail to start properly.

The racer should stand on the edge of the raft or tank with the body bent forward at right an-

gles from the waist. His arms should be extended backward and held until the word "Go!" when they should be swung quickly forward with

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A RACING START

the body. This gives a wonderful springing jump. Land in the water very flat so as to lose no time in coming to the surface.

VII

It is very valuable to know how to float as well as to swim, because by floating on your back you can keep your head above water at least two or three times as long as you can by any form of swimming stroke, and you do this without becom-

ing exhausted. It is a very simple matter to float. It is not even necessary to hold your breath, but it is necessary to keep cool. Every one would naturally float in the water if he did not get excited and begin clutching at empty air. Just throw your head back and your feet up. Then stretch out your arms at right angles, waving your hands gently up and down to keep your balance, or backward and forward if you want to keep moving slightly. Your balance will be easily kept by very slight motions of your hands. You will find yourself floating with no further effort. Your body should lie nearly flat, and close under the surface of the water. You simply lie there, just as comfortably as if you were in your bed. And the gentle motion of the waves will remind you of a canoe. Of course, it is not possible to float with equal comfort in rough water.

Remember that, although the bulk of your body is heavier than water, you have a natural air-bladder, or internal life-preserver, in your lungs; and this will keep you afloat perfectly so long as you do not get too much of your body above water. Your nose will naturally be above the surface while you float on your back, so you will have no trouble in getting all the air you need to breathe.

VIII

A "STUNT" which is most interesting, both to perform and to watch, is swimming under water. To glide about like a fish in the water, darting here and there, is great fun. All that is necessary to do this is to take two or three deep breaths, so as to fill your lungs with air, then plunge in head first, diving rather deeply, and, the moment you get under water, begin swimming with the breast stroke, holding the head down slightly, so as to counteract your natural tendency to rise up toward the surface again. As soon as you begin to feel short of breath, lift your head and you will shoot right up to the top.

Of course, it is best to try under-water swimming only in a tank or pool where the water is clean and clear of obstructions, so as to run no danger of getting entangled under snags or stuck in the mud. It adds much to both the pleasure and the safety of this sport to learn to keep your eyes open under water, which is perfectly safe and fairly easy with a little practice.

Another interesting accomplishment is to learn to swim fast on your back. This can be done either by throwing back both arms at once and "swishing" them sharply down to your sides, or

by whirling them alternately. The holder of the world's record of swimming on the back uses a beautiful double paddle-wheel stroke with his arms and the crawl kick with his legs, whirling one arm after the other in rapid constant circular motion. Great speed is attained in this way, and the stroke is not very difficult to learn, no more so than the double overhand which is commonly used in swimming on your back.



Camp Fire Girls

DIVING TEACHES CONTROL OF THE BODY

Perhaps the most attractive of all the swimming tricks is diving. A pretty dive brings rounds of applause always, and is the most picturesque of all the swimming events. The best

dive is the one which causes the least splash. To cut the water like a knife, hardly making a ripple on the surface, is the highest art of diving. The arms should be extended above the head, the palms of the hands together, so as to "split" the water like the prow of a boat; and the body should be held as rigidly straight as possible. Bending the arms, legs, or body would cause you to strike the water more or less sprawled out. Water is not solid, of course, but if you strike it too flat you may hurt yourself severely. Therefore, in diving, the best form not only avoids the splash which looks so badly, and which takes away from the speed and length of a dive, but also — and this is very important to remember — it allows you to dive without injury.

QUESTIONS AND PROJECTS

1. Why do you like to bathe or swim?
2. If you do not know how to swim well, why should you learn?
3. Why are girls sometimes better swimmers than boys?
4. Why is it that we do not swim naturally, as the animals do?
5. The dog-paddle stroke is a good one for beginners. Why?
6. Make a list of the safety rules for swimmers that you find in this chapter.

7. What are the swimming strokes explained in this chapter?
8. Where in your city or town can you practice them? If you already know these strokes, perhaps you will help some of your friends to master them.
9. What caution should you keep in mind if you wish to enter a swimming contest?
10. You should learn to float. Why?
11. If you know how to swim and want to learn some stunts, you will find some good ones described in this chapter. What are they?
12. After you have practiced and become expert in the water make a report of your progress to your class.

CHAPTER IX

HIKING AND CAMPING

MEN surely must have grown up in the woods in the beginning, we are all so fond of getting back to them. Just the sight of their cool shady

spaces, green roofs, and their soft carpets of moss or dead leaves makes us feel at home at once.

Men have always felt at home in the woods. No longer ago than the days of our frontiersmen great-grandfathers, and for countless ages before that, men have built their



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THE EDGE OF THE WOODS IN SUMMER

houses and barns out of their logs, warmed themselves and cooked their food with their firewood, hunted their deer and turkeys and squirrels, lived

on their berries and nuts, and clothed themselves in the furs which they trapped in them. No wonder we are glad to get back to them whenever we can.

At every season of the year the woods are fascinating. In the spring there are the tiny green leaves unfolding, the birds coming back from the South and beginning to sing, the first shy flowers pushing their heads up through the brown leaves. In the summer, the full orchestra of birds is playing morning and evening, the flowering shrubs are blazing into pink and crimson and white, while the meadows alongside are a carpet of green and gold with buttercups and daisies in the grass. In the fall there are the nuts and late berries and the blazing leaves; and in winter, the sparkling white blanket of the snow against the evergreens and laurel, or the crimson hollies, with every branch turned into a silver-frosted spray of jewelry.

Next to the woods we feel most at home on the road. We are born travelers, every one of us, otherwise we shouldn't be on this side of the Atlantic. Our fathers were rovers, eager to see something new, to find something better. The friendly winding roads and the little paths that strike across the fields all seem now to invite us to follow them.

There are few greater pleasures in life than the open road, your lunch in your pocket, and the day before you. Get the hiking habit while you are young, and it will be one of the greatest sources of health and pleasure to you all your life. Hik-



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A REAL TREAT — A DINNER COOKED OUT-OF-DOORS

ing is the best single all-round exercise in the world. It exercises not only legs, but lungs, back, and shoulders as well. You can take it anywhere, in city or country, at any time of the year, in any weather except heavy storms, and in any costume that is loose and comfortable.

With all the wonderful advances which have

been made in speed and ease of traveling, the train, the trolley, the automobile, none is yet the equal of walking for pleasure, health, and exercise combined, and there is no fare to pay or "gas" to buy.

It is a great mistake to suppose that you cannot get plenty of good and interesting hikes in a large city. It is a great advantage to get into the open country, but in a city there are other parts of it to visit, perhaps a zoo or a picture-gallery, or some interesting new or old public buildings, or a great factory. There are parks and boulevards to walk through, or a lake-front or river-front to visit and watch the great ships and fussy little tugs coming and going. Then it is usually easy to take a convenient trolley or suburban train out to the open country and start from there.

If a hike is to do you good and build you up for longer trips in future, you must enjoy it. That means that you must not plan to go too far and come back all tired out. Try at first an afternoon hike of two or three miles, or an all-day hike of from four to six miles with zigzags and side shoots to see or gather things that catch your eye. You should start out rather slowly and warm up to your work gradually. As soon as

you begin to perspire, stop and rest for a few minutes and cool off, like the Arab horses that we read about in Chapter VI.

Of course, you must keep a good lookout as you go for the birds and flowers along the road-



Camp Fire Girls

A HIKE THROUGH THE WOODS

side, the cattle in the fields, and the lambs and colts in their season. Half the pleasure and benefit of a walk is in what you see along the road. This keeps you swinging along in fine style with never a thought of being tired or bored.

To enjoy your hike thoroughly, you must be dressed comfortably for walking. The two parts which are the most important are your head and your feet. Your hat or cap should have a fairly wide brim to keep the sun out of your eyes, for the steady glare of the light often tires you and

makes your head ache worse than the miles you cover. A brim behind is also useful to keep the rain from beating down your neck if you are caught in a shower. Altogether the best hiking headwear is a soft felt hat, something of the famous Boy Scout and Girl Scout shape, with holes punched in the sides to let in the air and keep your head cool.

Then your feet should be shod with medium-weight, comfortable shoes, on something of the capital "army last" shape, with soft, thick, smooth-fitting stockings of either wool or cotton. If woolen stockings irritate or chafe your feet, a pair of light cotton socks may be worn under them, and, indeed, two pairs of light or medium-weight socks will often pad out your shoes and keep your feet from chafing better than a single thick pair.

Ordinary ankle-high shoes are best, for the lower ones let in too much dust and gravel from the roadway, which is the surest way to make your feet chafe and blister. If the way is muddy, or you are going across country through high grass or brush, a pair of canvas leggings or army puttees are useful.

For the rest of your costume, a soft woolen shirt or blouse, with sweater or light woolen coat

or khaki jumper, which can be tied around your waist by its sleeves till needed, and knickerbocker trousers or short skirt or bloomers will make you fit for any kind of road or weather.

Always travel light and carry as little luggage as possible. A weight on your back almost

*Kodak*

A FINE STRING OF FISH FOR SUPPER

doubles your work and seems to grow heavier with every mile you cover. Yet you can easily carry some necessities with you. First and most important of all comes food, for this is your body gasoline. If you are going for all day, you will need to take a lunch with you, plain

and substantial and not too much. A couple of hard boiled eggs and a few sandwiches, one of meat, another of bread and butter to eat with your eggs, and a couple of jam or jelly, make a good open-air meal. A few olives or pieces

of celery or lettuce make a good addition. If you have them made up into three or four small flat parcels and distribute them about in your pockets, you will hardly notice either their weight or bulk.

If you want a real treat, take bread-and-butter sandwiches and a piece of steak or a few slices of bacon to broil over the fire on the end of a pointed stick. Nothing that you will ever eat at the finest restaurant or hotel table will taste so delicious.

If you are going for only a half-day hike, you will not need a regular lunch, but it is well to carry with you a thin sandwich or a couple of cookies, with a cake of nut or milk chocolate, or a handful of raisins or prunes, and perhaps an apple. Sit down and eat them about the middle of your hike, for growing youngsters need a light lunch in the morning and in the afternoon, and a little of these foods, which are of small bulk, but very nutritious, will keep you from getting too hungry and often prevent a headache. You are burning up your body "gas" very fast on a hike.

Then, perhaps along in the late afternoon, when your feet are beginning to feel a little heavy and your legs stiff, you may come to some nice clean farm or dairy lunch, where you can get a glass of milk or a cup of hot chocolate, and this

will bring you home with your heads up and your legs going like engines.

Of course, you will need a paper and pencil to take brief field notes or make sketches of the interesting things you see, if you have a gift in that



Kodak

A GOOD PLACE TO STOP AND REST

direction. If there are several in the party, one might take a small camera, others some of the pocket-size booklets on how to recognize the birds or the trees or the flowers, and perhaps one a very small first-aid package. A small paper of pins or a few loose safety-pins for road repairs, and an extra handkerchief, are always useful;

also a matchbox or two to carry home any specimens of insects or shells which you may find. Don't forget a good piece of string and a few rubber bands for tying up flowers or other "plunder."

When you set out to enjoy long-distance walking after the fine summer days come, you will want to carry your hikes farther away from home. What fun to spend a night or perhaps two or three nights out in the open! This will, of course, mean a load to carry and slower going, but there is a great satisfaction in feeling that like a snail you carry your house on your back and are ready to camp for the night anywhere and at any time that you please.

It is hard work to break camp every day, so probably the best way to begin is to hike to the place you have picked out to camp, spend two or three days there, and then hike back.

First of all, you will need blankets, of the lighter army type. With these and a shelter of boughs to keep off the dew you can sleep out very comfortably on a fine night. Or a large piece of canvas or duck with ropes at the corners, stretched over a pole fastened to two trees or saplings, will keep off a shower. But if you are going to be out for more than one night, you had

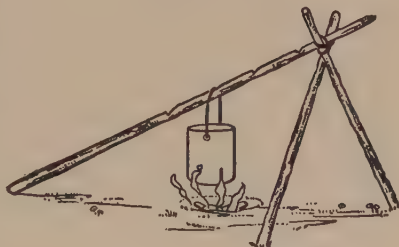
better have a small shelter tent in case of rain. For a very moderate sum you can buy or rent a small "pup" tent, which will shelter four of you. It can be pitched with a rope and one jointed pole, and in the woods the rope can be tied round a tree. This, with one's share of the food, will make a load for one of you. Another of you can take his blanket and the two cooking tins or buckets, one for stews and fetching water, and the other, fitting inside it, for cocoa. The third boy or girl can carry the skillet or frying-pan (or two thin ones nesting into each other), half a dozen tin plates, and three nested tin cups; and the fourth, a pannikin for water or stewed fruit, knives, forks, and spoons, three more tin cups, the woods axe or hatchet for driving tent pegs and cutting firewood, and various odds and ends which are sure to pile up.

Don't overload yourself with food. A few pounds of bacon, half as much dried beef, a small box of flour, a little cornmeal for frying fish in, a pound of butter, a package of raisins, a couple of pounds of sugar, a piece of cheese, and pepper and salt, are enough. Carry mainly the dry things and plan on getting potatoes, green vegetables, eggs, bread and milk from the farmers near your camp. If you have room, a couple of

small tins of jam and a package of self-raising flapjack flour will come in very handy and taste more than good in the open air. Any of the camping or woodcraft booklets, like the excellent manuals of the Boy and Girl Scouts, or those issued by some of the Physical Culture Departments of the Y.M.C.A., will give you all sorts of good recipes and directions for camp cooking, which would take too much space here.



Camp Fire Girls



Boy Scouts of America

TWO FIRES FOR CAMPERS

The pot hangers can easily be made from forked or straight green sticks.

In most parts of the country you can lay a ring of stones around your camp-fire and balance your kettle and skillet upon these, or hang your kettle on a "crow" or "pigeon," a green stick sharpened at one end, thrust into the ground, and supported by a rock or chunk so that it swings in a notch out over the fire. But if you live in a prairie State, you

may find it very useful to have a light but strong wire grating or rack about fourteen inches square, with a sharpened wire leg or prop looped on at each corner. Tap or press the pointed legs into the ground far enough to hold firmly, and you have an excellent "stove-top."

*Aloha Camps*

A SIMPLE BUT EFFECTIVE SHELTER

A whole chapter could be written on pitching the tent, and the manuals mentioned will give you full directions, but from a health point of view a few things are of importance. Try to choose a smooth level patch of ground either on the top of a little rise or on a shelf on the side of a hill where the ground slopes gently away from it.

Then dig a shallow trench across the highest end and down the two sides. Five or six inches deep is enough to keep rainwater from seeping in under it along the ground, and this will insure you a dry bed.

As to your bed itself, if you are lucky enough to camp where the balsam fir grows, layers of its twigs make a splendid health-mattress. Or, if you can find plenty of dry last year's grass or fern, they are excellent. But if they are not available, a couple of armfuls of hay or straw from some good-natured farmer will give you a slumberland fit for a king.

It is also well to take along a tube or stick of one of the spicy "skeeter-skoots" or mosquito-bite protectors, or your sleep may be broken, and in some parts of the country you might possibly catch malaria. Then, after a royal camp supper and some stories around the camp-fire, into your blankets to watch the glowing logs die down and the stars shine out, till you drop off to wake in the glorious morning air, feeling as if you had been made new while you slept.

QUESTIONS AND PROJECTS

1. Why do the woods seem to be our natural home?
2. At what season of the year do you find the woods most attractive?
3. Why is it that all of us like to travel and explore new roads and pathways?
4. What are the advantages of hiking as an exercise?
5. What opportunities for hiking are there around your city?
6. If you are not accustomed to taking long walks, what is the best way to get used to it?
7. How does a wide awake boy or girl make use of every minute during a hike?
8. What kind of clothes are best for walking and camping?
9. Perhaps you can suggest some good lunches besides those mentioned in this chapter.
10. What other luggage besides eatables are suggested for the short distance hiker?
11. If you intend to camp out overnight, what will you find it necessary to carry?
12. How can you protect yourself against insects while camping?
13. An organized hiking club is a great deal of fun. Choose a good route, and take some good lunches. If you want to camp there are some good directions in this chapter.
14. How do you make a good camp bed?

CHAPTER X

OUR FRIENDS IN FEATHERS¹

WHEN we start out into the fields and woods, what do we look for? Either flowers, berries, or nuts, or else birds, animals, and fishes. When I was a boy, I'm sorry to say, we used to go out with bows and arrows and slingshots, and even guns, after the poor little birds and squirrels, though we very seldom hit any. The boys of the present day, however, have found out what pretty, cheerful, interesting little wisps of feathers and what good company and pleasant neighbors the birds are. They get far more pleasure out of watching them flying and feeding and nest-building and hatching their young ones than we ever did out of hunting them. It is a pleasant thing to feel that, whenever you go out into the woods or the orchards or the fields, there are friends waiting for you, fellows that you know. We all enjoy being able to say: "Ah, there's Robin"; "There comes Woodpecker"; "Just listen to Blue Jay scolding!"

¹ The illustrations on pages 124, 129, 130, 132, 133, 136 and 139 are reproduced from *Birds of Village and Field*, by Florence A. Merriam (Houghton Mifflin Co.). Those on pages 121, 123, 128 and 141 are from drawings published by the *National Association* of Audubon Societies.

In the early days of our country, settlers had to help out their supply of fresh meat in fall and winter by the birds and animals they could shoot in the woods. This was the beginning of our interest in the birds, but, now that we have plenty of fresh meat all winter and the game-birds big enough to eat have become so much scarcer, we no longer depend upon wild things for daily food.

There are, of course, a great many different kinds of birds, seventy or eighty or more in almost every country neighborhood, East or West, North or South. Although it would be very nice to know them all by name, this is not necessary to your enjoyment of bird life. If you really know by sight and song one or two out of each of the main groups, or, as the scientists say, *families* of birds, that will give you a fair idea of them all and how they live.

One of the best birds to begin with is the robin, because he is one of the commonest birds all over the United States, and therefore easy to find. Also he's big enough to catch the eye; and his ancestors have lived so long about houses and gardens and orchards that he is quite tame and hops about cheerfully in the open, on the grass, under the trees, without taking the least trouble to hide himself. You can tell him at once by his red-

brown breast, dark back, black head, bright round eyes, and yellow bill.

The robin does not leave you long in doubt as to what kind of food he eats, for, if you watch him quietly for a few minutes on the lawn, he will hop quickly over side-ways, dart out his beak, grab hold of an earthworm (or fishworm) who has just poked his head up out of the ground, and begin to tug and pull at him to haul him out of his hole.



ROBIN

Usually he gets him; and sometimes he pulls him in two, for the worm clings tight, and then, after pounding him four or five times on the ground to make him tender, down he gulps him. If it is the nesting season, Mr. Robin holds the worm in his beak till he can pick up two or three others, and then flies away with all of them in his beak for his young ones' lunch.

He and his mate may build their nest in the fork of a tree, often of a fruit-tree in the orchard

or garden, but I have known them to choose the eaves of a front porch or the top of the pillars of an upstairs balcony for their nursery, so friendly and fearless are they. You can tell their nest at a glance, a comfortable, brown, thick-walled cup, the size of a large coffee-cup, woven of long dried grass, or tough fibers of thin bark, lined with fine soft grasses, or flocks of wool and cotton if they can find them; and they always use a quantity of mud so that their house is not only sheathed but plastered.

You really wonder how they can get the nest so beautifully and evenly round and cup-shaped, until one day you are lucky enough to see the mother bird sitting down and turning her plump little body round and round as she builds into the nest walls the grass and cotton-waste carried to her by the father bird.

Other birds have this curious mud-plastering trick, particularly the swallows, whose mud nests lined with feathers you can see stuck up, like "mud-dauber wasps' " nests, under the eaves of a barn. Some swallows who can get no mud to mix with their saliva pour out from their salivary glands a thick and gummy secretion, which clots like milk when it dries. So that their nests are built almost entirely out of this sort of gelatin.

like great big saucer-shaped gumdrops. Chinese epicures pay huge prices for them to make into soup, which, they say, is as thick and jelly-like and delicious as turtle-soup.

The robin's song is not appreciated as it should be, owing to our familiarity with it. It is cheerful and long-continued, and may be heard at almost any time of day, but chiefly early in the morning and late in the afternoon.

A cousin of the robin's is the bluebird. It is said that, when the Pilgrim Fathers first saw this bird, they called it the "Blue Robin" because it reminded them of the beloved Robin Redbreast of England, their old home. Like the Indians, they greeted this beau-



BLUEBIRDS

tiful little creature as an early herald of the spring. The bluebird has always been a welcome arrival after the cold and storms of winter; and no bird is better known throughout the eastern and southern parts of our country.

Like the robin, the phœbe, the housewren, and some of the swallows, bluebirds make their nesting-place in the crannies of farm-buildings, in bird-boxes, in holes in fence-posts or telegraph-poles, or in the natural cavities in old apple-trees, these last being, perhaps, their favorite locations. They live for the most part on harmful and annoying insects, and thus are good friends of farmers and gardeners.

You will find the bluebirds among the most attractive of our feathered friends, not only because



THRUSHES

1. Hermit Thrush. 2. Wilson's Thrush.
3. Wood Thrush. 4. Olive-backed Thrush.

of their lovely coloring, but also because of their interesting ways of living in close companionship with people, and their tireless devotion to their nestlings.

In the family of the robin belong also the thrushes, beautiful, brown-backed, cream-

breasted, slim-shaped birds, about two thirds his size. They like the cool green shadows of the deep

woods, and only hover round the edges of the orchards and gardens. As songsters they have no superiors anywhere in the bird world and few equals. Their songs are of such exquisite clearness, beauty, and sweetness, that after you have once heard them you go back again and again at sunset to that bay in the edge of the woods where you first caught the bell-like notes.

Next in familiarity come that lively, hopping, tail-twitching, bright-eyed swarm of little brown and striped chattering featherpuffs called sparrows. First of all, it must be said that there are sparrows and sparrows. Nearly all the bad reputation given to the swarms of these little brown-coats is due to one kind or species, out of more than forty, the so-called English sparrow. Although he is only one among forty, he is so vastly more energetic and so successful as a breeder and a colonizer, so "efficient," in the language of the day, that in our cities he outnumbered all the rest of the family put together ten to one. It must be frankly admitted that the common or English sparrow is a regular street-arab, a "hard citizen." He will steal and fight and swear in public, and pick open flowerbuds and eat fruit and block up roof-gutters and ventilation-shafts with his huge rag-bag nests, made of pecks

and half-bushels of straw and sticks and cotton-waste and wool and feathers.

On the other hand, he has several good qualities and strong points in his favor to balance his bad traits. In the first place, he is about the only bird who can thrive and flourish alongside of man in the smoke and grime and racket of the cities. He is thus practically our only feathered visitor the winter through, when nearly all our other bird neighbors go South, who chirps and hops and squabbles in our market-places, our city squares and parkings, and on our house-tops and window-sills.

Secondly, though by nature a grain-eater, he kills and carries home as food for his nestlings enormous quantities of insects, caterpillars, and worms all through the nesting season, a season which runs from the first rays of spring sunshine in April till autumn. Other birds are contented with one or at most two broods in the season, but four or five nestfuls a year is the sparrow's number.

The odd name "Peabody-bird" was given to one of the most accomplished pipers of the sparrow family, the white-throated sparrow, because the words of his song are supposed to be

"Old Sam Peabody! Peabody! Peabody!"

See whether you cannot hear him singing it some day this summer. Who Mr. Samuel Peabody was, who has been immortalized in this delightful way and what he had done to deserve it, nobody seems to know.

Country sparrows are the best of friends and neighbors, because though they occasionally steal a few cropfuls of wheat or oats from the shock, or even from the oat-bin or granary if the door is left open, or peck holes in ripening strawberries or plums, this is nothing compared with the great swarms of destructive insects and caterpillars that they devour, to say nothing of the bushels of weed-seeds.

Like many other large and widespread families the sparrows have a huge family "connection" or network of relatives of all sorts and degrees, big and little, far and near, uncles, cousins, aunts, so that, counting all, down from first to fortieth cousins, nearly all the birds you meet in orchard, meadow, and wood are of the sparrow blood and kinship. In fact they are scientifically known as *Passerine* or "sparrow-like" birds. For instance, all the thrushes, robins, blackbirds, finches, flycatchers, starlings, larks, bobolinks, warblers, shrikes, come under this heading, so that if you get to know Mr. Cock Sparrow and

his family relations, you will have a nodding acquaintance with over half the birds you meet in the open.

One of the most charming of the whole connection, a first cousin, is the brilliant little wild canary, or "lettuce-bird" or "thistle-bird," whose sulphur-yellow body and velvet-black



GOLDFINCH

wings and head like a great butterfly can be seen swaying on the tall stalks of lettuce run to seed in your garden or on the tops of thistles, eagerly pecking out the thistle-seeds before they

can launch off on their balloons of down and sail on the wings of the wind all over the meadows and grain-fields to scatter the prickly pests broadcast over the farm. His real name is American goldfinch. A somewhat distant relative is the well-known bobolink, whose somewhat similar but less striking colors, cream-color and black, can be seen swinging in the wind on a tall weed or grass stem above the meadows in June, while he pours



BOBOLINKS

out his ringing musical "bobolink, bobolink, spink, spank, spink!" to his mate on her well-hidden, grass-woven nest on the ground under the thick green tufts of timothy.

While you have been getting acquainted with the hosts of the sparrow family, as you were passing through tall timber you have often been startled by the sudden flight from a big tree-trunk above your head of a big noisy bird with a vivid black-and-white jacket and a crimson hood, looking in the tree-tops half as big as a pigeon. This is the big red-headed woodpecker; and you have probably disturbed him in the middle of a nice meal of worms which he was digging out of a rotten limb or of insects picked out from the cracks and under the scales of the bark. Or the first sign of his presence may have been a ringing tattoo, like a small snare-drum, beaten upon a hollow branch or trunk of a dead tree. Then, if you look carefully, you will see the red-hooded drummer beating his tattoo, "Turrerr-turrerr-

turrrr," on the dead limb with great energy and enjoyment, always head uppermost, clinging to the limb or trunk with his sharp-clawed feet and propping himself up against the tree with his short stiff tail, which has ten thick strong feathers in it for this very purpose.

Why does he drum so cheerfully? Some say



RED-HEADED WOODPECKER

just to make music and enjoy himself, as you pound a drum, or rattle a stick along a picket fence. Others, more matter-of-fact, say that he does it just to half shake, half frighten the worms and insects out of their holes in the wood and bark, so that

he can lick them up with one flash of his long, sticky tongue.

But I think Red-Head drums for both reasons, for he has been known to fly up onto church steeples and play roll after roll upon the weatherboards and even copper sheathing where there

hardly could be very many insects. Why shouldn't he get a little fun out of his musical accomplishment, as well as earning his breakfast by it?

Incidentally Woodpecker makes another use of his sharp, hard, pickaxe-like beak and powerful neck muscles, and that is to hollow out big, comfortable, bottle-shaped holes, with a small mouth, for nesting and sleeping. A half-dozen white eggs are laid on the "sawdust" and fine chips at the bottom of the hole, and the little woodpeckers have a warm, dry, storm-proof, cat-proof, and owl-proof nursery from the moment they come out of the shell. An angry mother woodpecker with her beak just sticking out of the small opening of the nest is a match for any bird, beast, or snake that may fancy young birds for breakfast, and the marauder must also risk a fierce attack in the rear by the spike-beak of father woodpecker. Out on the prairies, where trees are scarce, there are woodpeckers who dig their nests and sleeping-holes in fence-posts or in the steep banks of streams! Not only so, but they have learned to catch insects on the wing up in the air, like flycatchers or kingbirds. So we should consider the woodpecker one of the cleverest birds in adapting himself to his surroundings.

You will also often come across another woodpecker, the flicker, rather larger and even more handsomely, though not so strikingly, colored; a beautiful brown with black bars, yellow and black-spotted breast, bright golden or copper-red



FLICKER

under-wings, and a comical square white patch in the small of the back, uncovered only when he flies. It looks just as if he had been mounted and badly stuffed and the cotton-batting was com-

ing out. You can easily tell him by his wedge-like woodpecker shape, his big beak, and his way of walking up and around the trunks of trees, head up, like a lineman climbing a telephone-pole. His common names are "Yellowhammer" and "High-Hole"; you can easily see why.

While you have been watching Woodpecker dancing up and down the tree-trunks, you have probably caught sight of a quiet but very stylish little feathered gentleman, about half as big again as a sparrow, beautifully dressed in a suit

of silver Quaker gray, which fits his graceful, slender body like a glove. He also is flitting with a gliding mouselike movement up and down the tree-trunks and branches, and hunting insects in

the cracks of the bark. He

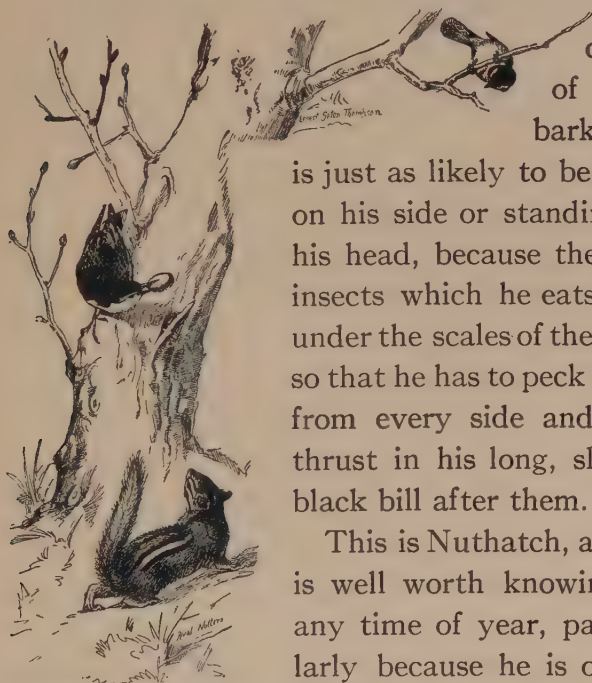
is just as likely to be lying on his side or standing on his head, because the tiny insects which he eats hide under the scales of the bark, so that he has to peck under from every side and then thrust in his long, slender black bill after them.

This is Nuthatch, and he is well worth knowing at any time of year, particularly because he is one of the few birds who stay with us after the snow comes,

NUTHATCH AND CHICKADEE

On the ground is a chipmunk.

and often all through the winter. He can do this because the frost simply puts his food into cold storage for him and the snow can never completely bury the bark of the trees, as it does the



ground with all the seeds, berries, and worms that other birds eat.

He needs a little encouragement at times, especially after heavy sleet storms which coat over his hunting-grounds with ice. If you would do him a good turn and win charming company for yourself, fix up a little birds'-table in plain view of the window overlooking your garden, if you are lucky enough to have one, or on your window-sill if you have not, and after a storm spread it with finely chopped table scraps. The lid of a cheese-box does very nicely for the table; and if in addition you hang up on each side of it in a convenient bush or tree one or two beef-bones with a little meat on them, and one or two good-sized pieces of fat, you will have a round of interesting callers all winter long and save the lives of many of our little feathered friends who without food might perish in severe weather.

Among the guests who may be expected are Chickadee and his tribe, easily known by their black velvet caps with white ear-muffs, and by their cheerful, ringing call, "Chickadee-dée, chickadee-dée!" Junco with his slate-covered overcoat and black cap and the white feathers showing in his tail when he flies up. He is no

coward, though he does show the white feather; if you doubt it, try sleeping outdoors in zero weather, as he does!

One day, perhaps, will come a whole flock of fluttering little brown-striped snow-buntings, who have spent their summer and fall up in the Hudson Bay country and are now coming South for the winter. These are the true "snow-birds," though Chickadee and Junco can also claim the name, as most of them have nested far North and come down to stay with us with the early snows. To their sturdy little constitutions, our climate is a regular Florida.

Another day you may hear a harsh, mocking scream, and look out to see an impudent rascal of a blue jay trying to carry off one of your beef-bones or sweep your table clear of scraps. This handsome scapegrace, in his brilliant blue-and-white uniform and dashing crest, is one of the few black sheep of the feathered world. The blackest tales are told of him; he is accused of raiding other birds' nests in the absence of their owners — for he is no fighter, in spite of his size and gay uniform and noisy bluster; of eating their eggs and, worse yet, their little nestlings. Indeed, the European gamekeepers shoot him — or rather his European cousin — at sight during

the nesting season because they think he eats the pheasant and partridge eggs.

He is a born and incurable thief, picking up and carrying off to his nest or some hiding-place everything that catches his eye and that is neither nailed down nor too heavy for him to lift. His Canadian cousin, called, for some strange reason, "Whiskey Jack," will actually come into camps and cook-shacks in the woods and try to steal the spoons!

I am sadly afraid that many of these reports are true, but like most sad tales they lose nothing in the telling,



BLUE JAY

and Blue Jay is probably not as black as he is painted. Certainly he does not make a regular business of robbing nests;

and if he did it would be only during the comparatively few weeks of the nesting season. The rest of the year he works hard for his living of seeds, grubs, grains, and acorns, the last of which he industriously stores up for winter in hollow limbs and tree-trunks, or deserted woodpeckers' nests. Even here he is accused of sharp practices,

lightening his own work by carrying off, if he can find them, the winter hoards of acorns and beechnuts stored away by squirrels and chipmunks. But we can't blame him too severely here, for I have even known of boys who would do the same thing, not thinking that perhaps the poor squirrel would starve to death in the frost and snow.

During his own nesting season Blue Jay captures thousands of caterpillars and insects to feed his youngsters and so helps to save our grains and fruits from damage; and another great virtue which he shows at all times of the year is to serve as unpaid fire-alarm for the entire woodlands. He is so wary and sharp-eyed and everlastingly wide-awake that the first wisp of smoke of a forest fire, or shadow of a hawk sweeping overhead, or the glimpse of a fox sneaking through the bushes sets his loud alarm-cry, "Jaay, jaay, jaay!" ringing through the woods. Many a hunter trying to sneak up on a bunch of deer has called Blue Jay all sorts of bad names for screaming out just at the wrong moment and sending the white-tails scudding away to safety. With all his faults, we and the woodland folk would sadly miss his bright plumage and noisy chatter and comical, prying ways.

Much the same may be said of Blue Jay's big

cousin, Crow, next to Robin probably the best known of our native birds. His familiar "Caw, caw!" heard at sunset or in the early morning, or in fact at any hour of the day, always has a cheerful companionable sound about it; but, in spite of this and of his grave deliberate ways and handsome suit of deepest black, which make him look as dignified and proper as a parson, unpleasant stories are told about him. He also eats eggs and nestlings, and even at times carries off young chicks from the farmyard; and farmers accuse him of digging up their seed-corn after planting and even of pulling up the young corn when it sprouts above the ground. So old and widespread is this belief that it has given the name "scarecrow" to those comical-looking dummies in ragged coat and tattered hat stuck up on a stick which guard our gardens and fields. In southern Europe the peasants when they plant corn stick up two or three ears on tall sticks so that the birds may readily eat these and not trouble to dig up the precious planted grains.

On the other hand, Crow has many points to his credit, far more than Blue Jay. He does suck eggs sometimes in the nesting season, but he also eats from spring to fall large numbers of the larger insects such as grasshoppers and beetles, all of

which are deadly enemies to crops. He is particularly fond of grubs, or the larvæ (caterpillars) of beetles, flies, locusts, and so on, which develop underground; and his European cousin, the rook, often calmly walks down the furrow behind the ploughman to pick up the grubs uncovered. Often it has been found that, when he is poking about in the soft soil of newly planted fields, the crow is really hunting grubs, and not digging up the seed-corn at all. Lastly, he is a first-class fertilizer and scavenger the year round, scattering over the fields or burying great numbers of dead fish, crabs, and the decaying bodies of animals, as well as quantities of garbage and offal of all sorts.



ONE OF THE HAWKS

Our acquaintance with the feathered folk would be limited without a briefest introduction to that other group of the black sheep of the woodlands family, the hawks and the owls.

These pirates of the air live frankly by the right of the strongest and eat everything that they can catch. Human methods, however, are in some respects too like theirs to allow us with a good grace to scold them very severely; besides, the common belief as to their cruelty in preying upon other birds is greatly exaggerated. From the beautiful little sparrow-hawk, scarce bigger than a robin, with his uniform of steel-blue and red-brown, to the big so-called "chicken-hawks," two thirds of the food of the hawks consists, not of other birds, but of insects and mice.

The number of chickens actually carried off by hawks from our farmyards is very small, not one fifth of those killed by rats, weasels, and other vermin. So that they are far more our friends than our enemies. We can watch them hovering and swooping over the meadows and stubbles, keenly searching the ground for a glint of gray fur, or sailing and circling overhead against the clouds like airplanes with the most beautiful and graceful flight of all flying things, without feeling that we ought in duty to hate or even disapprove of them. Still less need we try to shoot or trap them.

Owls, with their huge round eyes and swooping flight in the dusk, close to the ground, are almost

entirely mice-eaters and insect-feeders. All the widespread ideas that there is anything uncanny or unlucky in their musical hootings and calls in the dark is pure superstition. Incidentally, they have very little wisdom, either supernatural or any other sort, but are extremely stupid as pets. So that you needn't feel in the least uneasy when you hear the owls calling in the night. They are perfectly harmless, and probably simply exchanging news on the best methods of mouse-hunting.



SCREECH OWL

QUESTIONS AND PROJECTS

1. If you belong to a hiking club you can well devote some of your time to bird hunts.
2. Why should we know our bird neighbors?
3. Make a bird diary in which you can keep a record of the birds as you study them or discover them for yourself.
4. An outline will help you to keep your facts in order, such as, habitat; appearance; characteristics; song; nest and eggs; food.

5. How can we attract the birds to our homes?
6. After you have studied about the birds in this book, go out into the woods and fields and find them for yourself. Report the interesting things you find to your class.

CHAPTER XI

OUR FRIENDS THE FLOWERS¹

NATURE is a wise old mother, for instead of trying to drive us out-of-doors, she has a dozen different ways of tempting us out into the air and sunshine; and among her best and most attractive baits are the wild flowers of spring and summer and the brilliant foliage of the autumn. When the wild geese fly honking overhead at night, and the ice goes out of the rivers and ponds, and the wind comes up warm from the South, we



A FLOWER-HUNT

¹ The flowers illustrated in this chapter are reproduced from *Familiar Flowers of Field and Garden*, by Schuyler Mathews, through the courtesy of the publishers, Messrs. D. Appleton & Co., New York.

get a breath from meadows and woods which calls us to come to them. A smell of fresh brown earth and wood-smoke from the spring brush-fires reminds us of our gardens. And all these things tell us that the time of flowers has come again; so, when Saturday comes, out we go.

The marvel of all the first spring flowers is that they look so delicate and frail, and yet they push right up into the air while the nights are still very cold and the snow lies in shady places in the woods. But they are wonderfully hardy and frost-resisting, and draw upon supplies stored up in their roots from last summer's sun. We are not called upon to do such wonderful things as our tiny friends the flowers, but we, too, can drink in sunshine through our skins and, mixing it with our food, build our bodies strong and straight and beautiful. So that the fresh air and sunshine which we get hunting for flowers do us almost as much good as they do them.

If we live in the northern or central part of our great country, after some skirmishing about over the leaf-mould among the gray tree-trunks, we shall probably catch sight of some pure white oval buds, about half the size of an almond, pushing up among broad green leaves shaped like a short-fingered hand, which fold round their stem.

When they open, they become a beautiful many-pointed star with a golden center. This is Blood-root, and, if you wonder why it is so named, pick one of the flowers and see the red juice which oozes out of the broken stem. If you loosen up the soil with your knife and reach the root, you will find it almost as thick as your finger, and full of this red juice.

A little farther on, and usually along the southern slope of a hill, your eye may light upon a group of finely cut, gray-green leaves, almost fernlike in form. As you come closer, you see push-



BLOOD-ROOT

ing up among them one or two sprays of plump waxy white little flowers, often of a pinkish

or a yellowish tint and of a curious double shape, something like an overfed capital H. This is Dutchman's Breeches, and one look is enough to explain the name, for they are most comically like the pictures of those pompous old Dutchmen in *Knickerbocker's History of New York*.

If you live in the northern belt or in the Alleghanies as far south as the Carolinas, you may have the good luck to discover, half-hidden among



TRAILING ARBUTUS, OR MAYFLOWER

the dead leaves, a creeping vine with glossy green leaves and pinkish-white little star-shaped flowers of a most delicious fragrance. This is

the spring queen of the woodlands, Mayflower, or Trailing Arbutus, one of the most bewitching and attractive little flowers that grows. Your first season's find of arbutus gives a thrill that you will long remember. It is unfortunately true that thoughtless people pick this flower so greedily that they tear up the roots and so kill the plants. You should be very careful in breaking off your flowers, because it would be a great

pity if the Mayflower should be killed off like a weed simply through the heedlessness of the people it attracts.

If you live in the sunny southern belt of our country, you may go out and see one of the most gorgeous displays and beautiful sights, outranking "Solomon in all his glory," the hills and ridges ablaze with the flame-colored Azalea, and a little later aglow with the pink-and-white clusters of the Mountain Laurel.

Another early spring morning you may go out into the



MOUNTAIN LAUREL



AZALEA



HEPATICA

greening woods and see what looks like little wisps of pretty blue smoke clinging along the

ground on the slopes and tops of the little rises. When you run up, you find these are clusters of little baby-blue or dusty-blue oval flower-buds opening into stars. This is *Hepatica*, whose name means "liver-like," and was given it because of its broad, oval, coppery-green leaves



SPRING-BEAUTY

which are shaped something like a liver. In another part of the woodlot or brushland you may find a level patch of ground dotted all over with tallish, pretty pink-and-white flowers with juicy stems and leaves like thick blades of grass. This is Spring-Beauty, and it doesn't need

a second look at it to show that it well deserves its name.

A Saturday or two later, you may find the brushwood stretches sprinkled with delicate, pure white flower stars, swaying in the breeze, above finely cut, silver-green leaves, and looking

light and airy enough to blow away. When you notice their slim, hairlike stems, and see how they dance in the gentlest puff of air, you will not wonder that the old Greeks prettily called them "Anemone," which in their language meant "wind-flower." They have many sturdier and more gorgeously colored relatives of the same name in our gardens, but none with their delicate, airy grace.

As a part of this spring procession of the

flowers have come shyly trooping up, first in dozens, then in hundreds, then myriads, the modest violets, gentlest and sweetest and best-beloved of



WOOD ANEMONE, OR WIND-FLOWER

the flowerets. Earliest along the southern shelter of the brushwoods, then in the sunny meadows alongside, then rising and spreading like a shallow sea of blue, spangled with white and purple and yellow, they soon spread all over the pastures and meadows. We are never tired of picking them to wear in our buttonholes, and when we see the fields gay with their pretty, childlike faces, set in their cluster of glossy green leaves, we know that spring is at the full and summer on the way.

This, of course, is only the shortest of introductions to a few of the charming friends you will find waiting for you in the fields in spring. It is hoped to be just enough to make you want to learn more about them from the beautiful little field-books with colored pictures, which tell you how to know the flowers by their colors and leaves and all sorts of other interesting things about them.

If you know about the wild flowers, you can, when the snow has become too sloppy for coasting and the ice too soft for skating, and until the ground is dry enough for the summer games, make many happy visits to the fields and woods and come back with rosy cheeks and health and happiness as well as trophies of flowers.

When summer arrives, there comes such a rush of flowers in all the open places that the mere list of their names would almost make a chapter; and all I can attempt is to mention a few of the most striking and let you get acquainted with them and their neighbors

through your field-flower-books. In the open woodlands grows Sweet William, or wild phlox, a pretty blue or bluish-pink flower about the size of a nickel, shaped like a little trumpet with its mouth spread out very flat, on slim single stalks reaching almost to



CRANE'S-BILL, OR WILD GERANIUM

your knee. The more light it gets the pinker it grows, so that on the edge of the woods or in a clearing it may be bright pink.

All over the meadows like a fall of snow glisten the beautiful Daisies or Wild Chrysanthemums, with their ring of narrow white petals standing out like a ruff around the great golden cushion in the

center. They are not popular with the farmer for they make very poor hay; but they are a wonderful addition to the beauty of the fields and

*Kodak*

A FIELD OF DAISIES

usually leave room for clover and buttercups and, for timothy and red-top and the other meadow grasses as well.

Everybody loves and looks for the wild roses, with their beautiful pink shells of blossoms, sharp little thorns, slender stems, and glossy green leaves. All over the pastures and along the roadsides and through the meadows they lift their blushing faces, from tiny little plants no higher than your ankle to bushes as tall as your shoulders: some with blossoms scarce bigger than your thumbnail, others as large as a silver dollar.

From rich spots in the meadows rise the lilies, the striking Tiger-Lily with its orange and brown back-curving pointed petals, and the Martagon, or Turk's Cap, with its crimson turban-shaped globe of bloom. Along the fences and edges of the bushes glows the Crane's-Bill or Wild Gera-

nium, with its pink petals and long bill or spike standing out from among them. In the moister meadows stand out the fragrant, thick-tasseled,



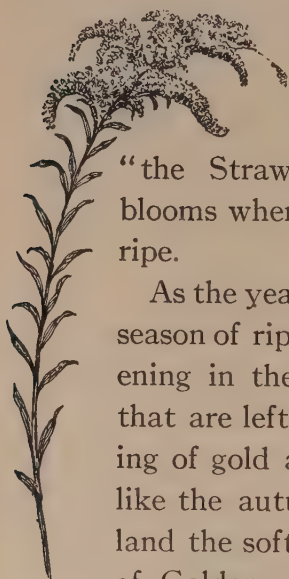
HARDHACK, OR PINK SPIRÆA



FIRE-WEED

creamy plumes of the Meadowsweet or Spiræa, while in the brush-pastures rise the pink, fluffy, spike-shaped sprays of its cousin, the Hardhack

or Pink Spiræa. In the distance gleams the pink or purple flag of the Fire-Weed, so-called from the fact that it likes to grow in stretches that have been burnt over a year or two before. Another name is Willow Herb, because it is the image of a wand of willow, long, narrow, pointed



GOLDEN-
ROD

leaves, and hung with purplish blossoms. The French have a pretty name for it, *Le Drapeau des Fraises*,

“the Strawberries’ flag,” because it blooms when the wild strawberries are ripe.

As the year draws toward the fall, the season of ripening, there comes a slackening in the stream of flowers. Those that are left take a quieter, richer coloring of gold and purple, and russet red, like the autumn sunsets. Over all the land the soft yellow sprays and plumes of Goldenrod spread themselves, each spray a delicate piece of finest jewelry work. Side by side with them, and in thicker clumps along the margins of the fields and along the old fences, show the soft purples and blues and lavenders of the Asters, with their tall, fine, bushy stems and cloud of pretty pin-wheel-shaped

flowers. In bushy clumps the Sumacs are turning dull crimson, while along the roadsides and down the borders of the fields stand in ranks the nodding Sunflowers with their golden disks.

The berries take up their part in the flowers' farewell decorations. Along the old fence-corners and uncut bushes the climbing loops and clusters of the Bittersweet shine out in red and gold, or the pink and red, popcorn-shaped berries of the Paradise Ash. And over their graceful saplings and small tree-tops glow the splendid crimson disks of berries of the Mountain Ash. Then the trees take up their part, with the crimson and gold of the Maples and Gums, the browner red of the Oaks, the soft yellow of the Birches and Poplars, and the autumn draws to an end in a blaze of glory.

QUESTIONS AND PROJECTS

1. Some pleasant day get your friends together and go on a flower hunt.
2. What benefit will you get from your hunt besides a knowledge of flowers?
3. Make a sketch-book of the plants and blossoms you find.
4. How many of the flowers described in this chapter do you know?
5. How many trees can you tell from their outline or the shape of their leaves?
6. Where can you get the information about flowers and trees that you want?

CHAPTER XII

ABOUT THE BOY SCOUTS

I

WHY does every boy with red blood in his veins want to be a Boy Scout as soon as he is old enough? While the uniform and the badges and the saluting and the parading are attractive, these are really very little things. What you ought to know about are the really important things that make the Boy Scouts so very much worth while. There is no better way to learn than by reading the *Boy Scouts' Handbook*. It is full of the most interesting facts, things that will thrill not only boys, but also girls; and I am glad to say that there are chances for girls, in such organizations as the Camp Fire Girls and the Girl Scouts, to learn how to do many of the things that the boys learn in theirs, and some other interesting things, besides. I am going to tell you a few of the things that you can read about more fully in the *Boy Scouts' Handbook*.¹

¹ The excerpts and illustrations from the *Official Handbook for Boys* reprinted in this chapter are used by courtesy of and special arrangement with The Boy Scouts of America, 200 Fifth Avenue, New York.

The great aim of the Boy Scouts of America is to make every Boy Scout a better citizen. It aims to train him physically — in the campcraft and woodcraft of the outdoor life, in order that he may have strength in after days to give the best he has to the city and community in which he lives, as well as to the nation of which he is a part. It seeks to develop him by observation and the knowing of things far and near, so that later on when he enters business life he may be alert and keen and able to add to the wealth of the nations. It teaches him chivalry and unselfishness, duty, charity, thrift, and loyalty; so that, no matter what should happen in the business or social or national life, he may always be a true gentleman, seeking to give sympathy, help, encouragement, and good cheer to those about him. It teaches him life-saving, in order that he may be able in accidents and peril by land and sea to know just what to do to relieve others of suffering. It teaches him endurance, in order that he may guard his health by being temperate, eating pure food, keeping himself clean; so that, being possessed of good health, he may be always ready to serve his country in the hour of her need. It teaches him patriotism by telling him about the country he lives in, her history, her army and navy, in order that he may become a good citizen and do those things which every citizen ought to do to make the community and land that he lives in the best community and land in the world.

A Boy Scout desires a strong body, an alert mind, and an unconquerable spirit, so that he may serve his country in any need. . . . A scout chooses as his motto, "Be Prepared," and he seeks to prepare himself for anything — to rescue a companion, to ford

a stream, to gather firewood, to help strangers, to distinguish right from wrong, to serve his fellow men, his country, and his God — always to "Be Prepared."



Boy Scouts of America

A TROOP OF BOY SCOUTS

A Boy Scout will enjoy a hike in the country, through the woods, far better than a walk on paved city streets, because he has been taught how to use his eyes. He can tell you the names and the habits of wild birds and animals, where they live, and what they eat; and in the woods he can stalk them by the tracks they leave behind them. He can light a fire on the wettest day without wasting matches; or, if he has to, he can strike fire from his knife-blade and a piece of flint. He

knows also the Indian's secret of rubbing sticks to start a blaze. Then, when he has kindled his fire, he knows how to cook a satisfying meal. And how good anything tastes that you cook yourself in the open, far away from the crowded lunch-counters of the city!

A scout can tie a knot that will hold; he can climb a tree that discourages others; he can swim a river, pitch a tent, tell you which fruits and seeds are good to eat and which are not. He can sail a boat, or paddle a canoe, or row a boat. He can send messages by signal without making a sound, or by im-



A GOOD TURN

A Boy Scout directing a Confederate veteran.

itating the sound of a telegraph key. He can tell north, or south, or east, or west without looking at a compass. He knows the stars by name and can find his way by watching them.

A scout is kind to everything that lives. He knows that horses, dogs, and cats have their

rights, and he respects them. He knows that it is weak and silly to tease dumb animals, or to allow them to be abused. He is careful to help people who are old, or weak, or helpless, or sick. He prides himself upon doing some person "a good turn" every day.

A scout does not run away or call for help when an accident occurs. He sets an example of coolness and courage, and thinks of the safety of others before his own. He knows how to stop the flow of blood from a wound, how to bandage a broken limb, how to help restore a person who is dragged from the water nearly drowned; and, what is more, how to do all these things without losing a minute.

A scout never fears danger, for he knows what to do in case of fire, or panic, or when caught out in a boat in a squall or storm.

A scout knows his city as well as he knows the trails in the forest. He can guide a stranger wherever he wishes to go. . . . He knows where the police stations are located, where the fire-alarm boxes are placed, where the nearest doctor lives, where the hospitals are, and which is the quickest way to reach them. . . . A scout is proud of his city, and freely offers his services when he can help.

A scout is a patriot and is always ready to serve his country at a minute's notice. He loves Old Glory,

and knows the proper forms of offering it respect. He never permits its folds to touch the ground. He knows how his country is governed, and who are the men in high authority. . . . He patterns his life after those great Americans who have had a high sense of duty and who have served the nation well.

II

SINCE every boy expects some day to join the Boy Scouts, he is, therefore, never too young to begin learning how to go about it. The best way is to ask some older boy who is already a scout. Probably the first thing that he will tell you is that you cannot join until you are twelve years old; but it will not be long before you are that age, and in the meantime you should find out all you can about the entrance tests and how to prepare yourself to meet them. Then, when you are old enough to join the Scouts, you will find that you can go through the early stages much faster than a boy who waits to learn everything after he passes his twelfth birthday.

So, ask all the questions you can think of. Among other things, your older boy friend will tell you that you will first become a Tenderfoot. To enter this rank, you must know and be able to repeat the Scout Laws, and the Oath in full.

You must also know the motto, sign, salute, and the meaning of the badge of the Boy Scouts.



(1) *Square or Reef Knot.* Frequently used in first-aid bandaging. Never slips or jams; easy to untie.



(2) *Sheet Bend or Weaver's Knot.* This knot is used in tying two rope-ends together.



(3) *The Bowline.* Used in lowering a person from a burning building, etc.



(4) *Slip, or running knot.*



(5) *Sheepshank*



(6) *Clove Hitch.* This knot holds snugly and is not liable to slip sideways.

KNOTS WORTH KNOWING

Then you must know how the National flag is made up, the history of the flag, and the forms of respect due to it. Lastly, you must be able to

tie several different knots or hitches in a rope, for use in camping, fishing, boating, and lumbering. These knots are (1) the square knot (the commonest knot for tying two ropes together); (2) the sheet bend, or weaver's knot (used in managing the sails of a boat); (3) the bowline (a noose that neither slips nor jams); (4) the slipknot; (5) the sheepshank (used for shortening ropes when they are too long for any particular use); (6) the clove hitch (used to fasten one pole to



(7) *The Fisherman's Knot.* Used for tying silkworm gut for fishing. It never slips; is easily unloosed by pulling the two short ends.



(8) *Timber hitch*



(9) *Two Half Hitches*

KNOTS WORTH KNOWING

another); (7) the fisherman's knot; (8) the timber hitch (used in hauling timber); and (9) two half-hitches (useful because they will not slip under any strain).

Here is the Scout Oath which every Boy Scout in our great country has taken:

On my honor I will do my best:

- I. To do my duty to God and my Country and to obey the Scout law.
- II. To help other people at all times.
- III. To keep myself physically strong, mentally awake, and morally straight.

The laws of the Boy Scouts of America are as follows:

1. A scout is trustworthy.

A scout's honor is to be trusted. If he were to violate his honor by telling a lie, or by cheating, or by not doing exactly a given task, when trusted on his honor, he may be directed to hand over his scout badge.

2. A scout is loyal.

He is loyal to all to whom loyalty is due: his scout leader, his home, and parents and country.

3. A scout is helpful.

He must be prepared at any time to save life, help injured persons, and share the home duties. He must *do at least one good turn to somebody every day.*

4. A scout is friendly.

He is a friend to all and a brother to every other scout.

5. A scout is courteous.

He is polite to all, especially to women, children, old people, and the weak and helpless. *He must not take pay for being helpful or courteous.*

6. A scout is kind.

He is a friend to animals. He will not kill nor hurt any living creature needlessly, but will strive to save and protect all harmless life.

7. A scout is obedient.

He obeys his parents, scout-master, patrol leader, and all other duly constituted authorities.

8. A scout is cheerful.

He smiles whenever he can. His obedience to orders is prompt and cheery. He never shirks nor grumbles at hardships.

9. A scout is thrifty.

He does not wantonly destroy property. He works faithfully, wastes nothing, and makes the best use of his opportunities. He saves his money so that he may pay his own way, be generous to those in need, and helpful to worthy objects.

He may work for pay, but must not receive tips for courtesies or good turns.

10. A scout is brave.

He has the courage to face danger in spite of fear, and to stand up for the right against the coaxings of friends or the jeers or threats of enemies, and defeat does not down him.

11. A scout is clean.

He keeps clean in body and thought, stands for clean speech, clean sport, clean habits, and travels with a clean crowd.

12. A scout is reverent.

He is reverent toward God. He is faithful in his religious duties, and respects the convictions of others in matters of custom and religion.

A boy promises to obey these when he takes his Scout Oath.

The Scout motto is "*Be Prepared*," ready and eager to help in any danger or in any pinch. And not only to help in times of peril or excitement, but in a hundred everyday ways, escorting ladies and children across busy streets, putting a horse's blanket back when it has fallen off in the winter-time, giving a thirsty horse or dog a drink, helping his mother and father about the house with the chores and the errands, washing the windows, working in the garden, and so on.

In order to be of use to others, the scout keeps himself "physically strong, mentally awake, and morally straight." He gets plenty of happy play and light work in the open air, he eats sensible, wholesome food, he takes plenty of sleep in a bedroom with all the windows open. He revels in soap and water, keeping his body clean and healthy; he brushes his teeth regularly and keeps himself clean inside as well as out.

III

HERE is the Scout Badge, which you will have pinned on you when you pass the first test and join a troop. As you see, it has three points, to remind you of the three parts of the Scout Oath.

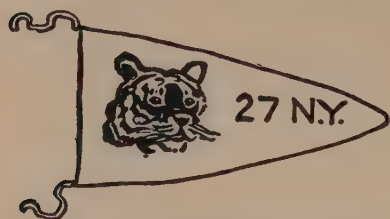
It is taken from the sign of the North on the mariner's compass, and means that the scout will be able to find his way wherever he may be. The Chinese claim that the quaint old sign was used on their ships' compasses, more than four thousand years ago. Whether this is so or not, it has been taken as the sign of pioneers, woodsmen, and scouts for many, many years. In the badge it is combined with an American eagle bearing the shield, to show loyalty to our country and flag.



THE BADGE OF THE
BOY SCOUTS OF
AMERICA

When a boy becomes a Tenderfoot he joins a troop, which is usually named after the town in which he lives, and which is numbered according to the other troops which have already been formed in the town; for instance, "Troop 10 of Chicago," or "Troop 5 of San Francisco." The troop is directed by a Scout-Master and one or more assistant Scout-Masters, and is divided into four patrols of eight boys each. Each troop has its own flag and also the National flag; and each patrol has its patrol sign, which is a flag showing the animal after which the patrol is named, in colors given to this animal by a committee of the

National organization of Boy Scouts. The flag of the Tiger Patrol, for instance, carries a tiger (color, violet); the Hawk Patrol shows a hawk



THE FLAG OF THE TIGER TROOP OF
BOY SCOUTS

(color, pink); and the Owl Patrol an owl (color, blue); and these pictures become the sign of the patrol which it attaches to any

messages which it may send or notices which it posts. For a rallying cry the patrol howls, or whistles, or barks, or roars in imitation of its namesake. After a little practice, scouts can soon learn to do this.

IV

AFTER you have been a Tenderfoot for a month or more, you may take the tests which, if passed, will entitle you to be enrolled as a Second-Class Scout. This is a pretty stiff try-out, for you must be able to show good working knowledge of (1) first aid and bandaging, with the proper treatment for fainting, shock, fractures, bruises, sprains, injuries in which the skin is broken, burns, and scalds. You must also know how to make stretchers out of sticks and coats, how to

carry the injured, how to put on simple bandages and to apply the tourniquet to check bleeding. (2) You must also know the alphabet of signaling. (3) You must be able to track some animal half a mile in twenty-five minutes, or, if in town, describe satisfactorily the contents of one store window out of four, after looking at them for one minute each. (4) You must go a mile in twelve minutes at scout's pace; that is, about fifty steps running and fifty walking alternately. (5) You must know how to use a knife and hatchet properly. (6) You must prove that you can build a fire in the open without using more than two matches. (7) You must be able to cook small quantities of meat and potatoes in the open, without pots or pans. (8)



THE MARINER'S COMPASS

The sixteen principal points are: North, East, South, West; Northeast, Southeast, Southwest, Northwest; North-northeast, East-northeast, East-southeast, South-southeast; South-southwest, West-southwest, West-northwest, and North-northwest.

You must earn and deposit in a public bank at least one dollar. (9) You must know the sixteen principal points of the compass.

This means work, but every bit of it is interesting; nearly all of it is in the open air; and altogether it will help to build you up and make a man of you better than any other course of study yet invented.

When this is done, and you are entitled to wear the Second-Class Scout Badge, which is a golden scroll with the motto, "Be Prepared," you will have some reason to be proud of yourself. You will laugh when you know that the ends of the scroll are turned up because they represent the corners of a Boy Scout's mouth, which turn upward, because a scout is always smiling. The little strands which hang from the scroll remind the scout that he is to "tie up" with the best boys as his friends; and the knot reminds him that he is to do his "good turn" each day.

V

BUT, of course, the name Second Class suggests of itself that there is a First Class, so it will not be very long before you will find yourself looking ambitiously forward toward the third and highest of the Scout Badges, and the rank of a First-Class Scout.

This is a very high rank, indeed, and you will be truly wise and experienced by the time you win

it. For it means being able: (1) To swim at least fifty yards. (2) To earn and deposit in a public bank at least two dollars. (3) To signal any ordinary message at a fairly fast rate. (4) To make a trip to a point at least seven miles away (fourteen miles in all), going either alone or with another scout, on foot or in a rowboat. On your return, you must be able to write a satisfactory account of the trip and of the things



ARTIFICIAL RESPIRATION

This is one of the most useful things you can learn. If any one in your party, when you are out boating or swimming, should be nearly drowned, the best way to revive him is to lay him, as quickly as possible, flat on his face on level ground, just turning his head a little to one side so that his nose and mouth will not be blocked. Then, kneeling astride of his legs, put both your hands on the small of his back and press downward with all your weight while you count three. This squeezes the abdomen and the lower part of the chest so as to drive the air out of the lungs. Then swing backward so as to take the weight off your hands, while you count three again; and then swing forward again and press down, again forcing the air out of the lungs. Keep up this swing-pumping about ten or fifteen times a minute for at least ten or fifteen minutes, unless the person begins to breathe of himself before this. Don't waste any time trying to hold him up by the feet, or roll him over a barrel so as to get the water out of his lungs. Just turn him over on his face as quickly as possible and get to work making a weight-pump of yourself on his back.

If there is any life left in the body at all when it is taken out of the water, you will succeed in saving it. It is very seldom, however, that any one who has been under water more than five minutes can be revived. — *From The Child's Day, by Woods Hutchinson.*

that you have seen. (5) You must know a good deal about what to do in the case of different kinds of accidents — how to help in case of runaway horses, mad dogs, and snake-bites; how to treat people for poisoning, sunstroke, freezing, and several other things; also you must know the treatment for sunburn, ivy-poisoning, bites and stings, cramp, chills, and a number of other things that are likely to happen to any one. Most important of all the things in this group, you must be able to demonstrate artificial respiration. (6) You must prepare and cook well in the open, using camp cooking-utensils, at least two articles of food commonly used by campers, and you must be able to explain to another boy how to do this. (7) You must be able to read a map correctly and to draw, from field-notes made on the spot, a rough sketch map which any one can understand, placing on it the proper marks for important buildings, roads, trolley lines, main landmarks, hills, etc. Also you must know how to show points of the compass without the help of the compass. (8) You must know how to use an axe properly in cutting light trees and logs, or else you must know how to do simple pieces of carpentry or metal-work and explain this to others. (9) You must know and be able to describe ten

different kinds of trees or plants by their bark, leaves, flowers, fruit or scent; or six kinds of wild birds by their plumage, notes, tracks, or habits; or six kinds of wild animals by their form, color, call, tracks, or habits. You must be able to point out the North Star and to name and describe at least three constellations of stars. (10) You must be able to prove that you have practiced day by day the principles of scout order and law. (11) You must train another boy to pass the Tenderfoot test.

Even this is not all that a First-Class Scout must be able to do, but it is enough to show you that a boy who has learned all these things will be able to take care of himself and others wherever he may be.

There is no need to feel discouraged, because you have six years, if you need that much time, to qualify for these different tests. You may take them one at a time, until you finally have passed them all. Just think of all the fun that you will have in training for the different tests, all of them things that every real boy is eager to learn to do. You do not need to worry about somebody to teach and coach you, for after you once become a Boy Scout you have your Scout-Master and his assistants, and every other scout

in every troop in your town ready and anxious to teach and help you.

VI

EVEN when you have become a First-Class Scout, you can still keep on learning. From the time when you become a Second-Class Scout there are no less than fifty-nine different subjects and arts which you can study, in each of which you can win a Merit Badge. For instance, you may take a course in bird study, and win a handsome badge with a bird on it; or a course in seamanship, which will give you the right to wear a badge showing an anchor; or a course in horsemanship with a horseshoe badge; or in marksmanship, winning a badge with a target. Or you may



THE BOY SCOUT
MERIT BADGE
FOR WIRELESS

qualify as a pioneer and sport a badge showing an axe and a pick-axe, crossed; or in wireless and wear a badge showing lightning flashes and telegraph symbols on your sleeves. These are only a few samples out of the whole list,

which runs through the alphabet from agriculture and angling to carpentry, electricity, forestry, life-saving, physical development, swimming, and many other useful things.

In short, if there is anything wise, or expert, or skillful, or clever that you would like to be, you have only to take your pick from this list and your Scout-Master, through the Boy Scout organization, will arrange for you to take a course in it. You will meet with the kind and cordial coöperation of skilled mechanics, naturalists, guides and woodsmen, athletes, music and art teachers, farmers, poultry-breeders. You will become a blood brother of all animals and of the trees, the birds, and the fishes, and the winds and the waves and the stars, and all pioneers and craftsmen, and when you have finished, you will be a real "Little Friend of all the World," like Kim in Kipling's famous story.

When you have won Merit Badges in the five subjects of first aid, physical development or athletics, personal health, public health, and life-saving or pioneering, you may come up for examination for the right to bear the title and wear the badge of a Life Scout. When you have acquired ten, including the five just mentioned, the Star Scout Badge will be awarded you; and, finally, to crown the whole of your career as a Boy Scout, you may, if your memory and your determination and your wind and endurance hold out, become an Eagle Scout by winning twenty-one Merit

Badges. Among these must be, of course, the five arts necessary to the Life Scout, and, in addition, cooking, camping, civics, bird-study, path-finding, pioneering, and any ten others.

I have now told you about the way in which it is possible for you to progress from Tenderfoot to



THE EAGLE SCOUT
BADGE

Eagle Scout. It remains only to tell about the Honor Medals which any well-trained Boy Scout may find a chance to win. These are not higher ranks, and are not won by passing tests. They are symbols given by the National Council to scouts who display unusual bravery and heroism in saving life. In the Boy Scout world, they mean the same as the various medals given soldiers, sailors, and ma-

rines, and others in the service of the Nation, in time of war. You will be prepared to win these Honor Medals if you faithfully study and practice all the arts of service to others that the Boy Scouts provide in their course of training; and the boys who are decorated in this way become marked men for the rest of their lives.

QUESTIONS AND PROJECTS

1. What is the aim of the Boy Scouts of America?
2. What does the organization teach the Boy Scout in order that he may accomplish this aim?
3. Is a good Boy Scout a valuable citizen? Why?
4. Must you wait until you are twelve years old, to prepare for the Scouts?
5. Study the oath, the laws, and the motto of the Scouts. Do you think that it is easy to live up to them?
6. What is the meaning of the Boy Scout emblem?
7. How are the Scouts grouped?
8. What tests must the Tenderfoot Scout pass before he becomes a Second-Class Scout?
9. What does a Second-Class Scout add to his badge?
10. What must a First-Class Scout be able to do?
11. Do you think that these requirements are too difficult? Where can you get assistance in taking the tests?
12. How are merit badges earned?
13. How can a scout win the right to the title of Life Scout; also that of Star Scout and of Eagle Scout?
14. If you are not already a Boy Scout, do you wish to become one as soon as you can?

CHAPTER XIII

GIRL SCOUTS AND CAMP FIRE GIRLS

I

THE Girl Scouts are not mere imitators of the boys; they have a line that is quite their own, as you will see a few pages farther on. They were first organized in England by the same man who started the Boy Scouts, General Sir Robert Baden-Powell. Under the leadership of his sister and his wife, the movement has gone forward at an amazing pace; and to-day there are multitudes of girls all over the world who are enjoying the Scout training, and who, besides being good, cheery comrades, are growing up into women who are able to undertake many different duties that make them most helpful to their families, and also to their towns, their cities, and their country.

There is a handbook called *Scouting for Girls* which explains carefully all about how a girl may become a scout, and what will be expected of her after she joins. I am going to select a few of the most interesting things, but to get the whole story you should read the handbook.

¹ Pages 178-183 of this chapter are adapted and condensed from *Scouting for Girls*, by arrangement with The Girl Scouts, Incorporated, 109 Lexington Avenue, New York.

Like the Boy Scouts, the Girl Scouts have the motto, "Be Prepared," and the slogan, "Do a Good Turn Daily." They take the same pledge of loyalty to the flag and the Nation; and they agree to follow a set of laws much like those of the Boy Scouts. This is because the object of the two organizations is the same, namely, to train its members for practical service for others. In addition, every Girl Scout, of her own accord, makes the promise, "On my honor I will try to be true to God and my country; to help others at all times; to obey the Scout Laws." These laws are as follows: I. A Girl Scout's honor is to be trusted. II. A Girl Scout is loyal. III. A Girl Scout's duty is to be useful and to help others. IV. A Girl Scout is a friend to all, and a sister to every other Girl Scout. V. A Girl Scout is courteous. VI. A Girl Scout is a friend to animals. VII. A Girl Scout obeys orders. VIII. A Girl Scout is cheerful. IX. A Girl Scout is thrifty. X. A Girl Scout is clean in thought, word, and deed.

In the following words, the handbook tells just why every Girl Scout wants to learn the things that as a member she does learn:

A Girl Scout learns to swim, not only as an athletic accomplishment, but so that she can save life. She passes her simple tests in child care and home

nursing and household efficiency in order to be ready for the big duties when they come. She learns the important facts about her body, so as to keep it the



Aloha Camps

GIRL SCOUTS ARE EXCELLENT CAMP
COOKS

fine machine it was meant to be. And she makes a special point of woodcraft and camp-lore, not only for the fun and satisfaction they bring in themselves, but because they are the best emergency course we have to-day. A Girl

Scout who has passed her First-Class test is as ready to help herself, her home, and her country as any girl of her age should be expected to prove.

Any girl ten years of age may become a scout. First as a Tenderfoot, later as a Second-Class Scout, and later still as a First-Class Scout, she takes tests, each one calling for a little more knowledge, which prove that she can use her head and her hands, that she understands how to take care of her health, and also what "helpfulness to others" means. The highest rank of all is the "Golden Eaglet."

II

THE Girl Scouts have their own impressive exercises for enrolling new members, for giving the

different badges and medals, and for the programs of their meetings. Their troops learn how to drill and how to march; and each troop has its own "flower crest," such as clover leaf, or red rose, or pine cone, which every member wears on her uniform.



GIRL SCOUTS AT DRILL

Signaling by semaphore, by "wig-wagging," by whistle, and by signs is part of the Girl Scout's training. So also are marching and "setting-up exercises." And, like their brothers in the Boy Scouts, the girls are taught all manner of useful facts about animal and bird life, wild flowers and herbs, how to take care of themselves and

others when camping, and when "hiking." They also learn about map-making, blazing a trail, and knot-tying. In short, there is no dividing line be-



GIRL SCOUTS UNDERSTAND "FIRST AID"

tween what is taught boys and what is taught girls about life in the open, or about "first aid" in the home or in the city streets, or about American history and patriotism. You probably guessed this when I first told you that "Be Prepared" — and this means be prepared *for everything* — is the motto of both Boy Scouts and Girl Scouts. Like the boys, girls may take proficiency tests and win special

badges and medals in not less than forty-seven subjects.

III

OF course, from the fact that girls are girls, and grow up with the idea of filling a different place in the home from the one that boys will fill as men, it is to be expected that Girl Scouts will be taught some things that the boys are not. This is wholly true; and the fields in which the girls are trained to special skill, and in which as Scouts

they may win Merit Badges, are, briefly: (1) home-making, which includes the care of the house, cooking, fighting germs, flies, and mosquitoes, the care of clothes, how to store food, and so on; (2) good manners, including behavior at the table; (3) nursing, which includes taking care of babies and children, bed-making, giving baths, amusing the sick, and so on; (4) public health, under which comes, first, personal cleanliness and health, and then passing on to others the rules that will make and keep all the people in a neighborhood well and strong.



THE GIRL SCOUT
"HEALTH WINNER"
MERIT BADGE

All that I have tried to do here is to show you what an interesting and helpful thing it is to be a Girl Scout. For the rest, I will merely quote a few headings from paragraphs in the handbook *Scouting for Girls*, and leave it to you to look them up and learn more. They are these: Five points of health for Girl Scouts; twelve secrets of the woods; the stars as the camper sees them; signs and blazes (to show trails and to give signals when in the woods); things to remember when "hiking"; mountain-climbing; the Girl Scout's own garden. Can you imagine any girl

who would not be the better for being a Girl Scout?

THE CAMP FIRE GIRLS

I

ANY girl who wishes to learn how to help her mother about the house, or who wishes the fami-



A BUGLER OF
THE CAMP
FIRE GIRLS

lies in other homes to be as happy as her own, will be interested in the things that the Camp Fire Girls learn to do. Members of the Camp Fire Girls have to be at least twelve years old; and, like the Girl Scouts, they agree to follow a certain set of laws. Also, they try in every way to gain and to keep good health, because they know that a girl who is not well and strong can hardly be of much help or comfort to anybody. The Camp

Fire Girls learn, too, it almost goes without saying, just as much about hiking, climbing, camping, nature-lore, first-aid, and other out-of-door subjects as either the Girl Scouts or the Boy Scouts.

Members are grouped into Camp Fires, under the leadership of an older girl called the Guardian; and meetings are held every week, with spe-

cial meetings once a month. After a girl has been a member for two months, she may, by passing a test, become a "Wood-Gatherer"; the next higher rank is "Fire-Maker," and the highest is "Torch-Bearer."

The watchword of the Camp Fire Girls is "Wohelo," which is made up of the first two letters of each of the words, "Work," "Health," and "Love" — the three things which these girls try to make the most of. The law which every Camp Fire Girl agrees to follow is this:

Seek Beauty
Give Service
Pursue Knowledge
Be Trustworthy
Hold on to Health
Glorify Work
Be Happy

Among the things the Camp Fire Girls do to keep the law are these:

Camp Fire Girls keep healthy. They walk thirty-five miles a week.

Camp Fire Girls save food in the kitchen.

Camp Fire Girls refrain from candy between meals, sodas, or chewing-gum — they save the money.

Camp Fire Girls raise vegetables for family use.

Camp Fire Girls can fruit and vegetables for use.

Camp Fire Girls care for little children.

Camp Fire Girls learn what to do in common emergencies.

Camp Fire Girls sing "America," "Dixie," and "The Star-Spangled Banner."

Camp Fire Girls go on hikes each week.

Camp Fire Girls go camping in the summer.



Wood-Gatherer

So you will see that they have high ideals to live up to, and also that they have a good time doing it.



Fire-Maker



Torch-Bearer

SYMBOLS OF THE
CAMP FIRE GIRLS

II

THE Camp Fire Girls make much of symbols.¹ For example, when one becomes a "Wood-Gatherer" she chooses a name and a symbol which stands for the qualities by which she wishes to be known. "Minnetoska," she might say, "is an Indian word meaning 'happy laughter.' The Law of the Fire says, 'Be Happy,' and I have tried to earn my right to this name by washing the dishes every morning for two weeks and being happy while I was doing it. As my symbol, I have

¹ The illustrations on pages 184, 186, 188 and 189 are, by permission, reproduced from *The Book of the Camp Fire Girls*.

chosen the Black-Eyed Susan because I have brown eyes and because the yellow of the petals stands for sunshine, and I want sunshine for every one in my eyes." Sometimes a girl makes up her own name, like the one who called herself "Neechee," because she wished to be *needed* and *cheerful*. I once heard of a girl who chose the name "Morning Star," because she liked to take walks before breakfast, and also to get breakfast, all by herself, for the rest of the family. Her sister, "Evening Star," liked to put the younger children to bed, and to tell them stories before they fell asleep.

Then there are costumes and robes, ceremonies, songs, and music for use at certain times, and Honor Badges to be won when a girl shows that she has mastered some bit of "craft," in the home, in camp, in health-keeping, in nature-lore, in handiwork, in business, or in patriotism. Girls who win these honors prove that they know how to do things that every girl should be able to do anywhere, under any conditions. To know about these different "Honors" and the tasks through which they are won, you should read in the *Manual of the Camp Fire Girls*; for this gives the answer to any question that you could possibly ask.¹

¹ The National headquarters of the organization is at 31 East Seventeenth Street, New York City. Any inquiry should be sent there.



THE SNOW MOON
(JANUARY)



THE THUNDER MOON
(JULY)



THE HUNGER MOON
(FEBRUARY)



THE GREEN CORN MOON
(AUGUST)



THE CROW MOON
(MARCH)



THE HUNTING MOON
(SEPTEMBER)



THE WILD GOOSE MOON
(APRIL)



THE LEAF FALLING MOON
(OCTOBER)



THE SONG MOON
MAY



THE ICE FORMING MOON
(NOVEMBER)



THE ROSE MOON
(JUNE)



THE LONG NIGHT MOON
(DECEMBER)

THE YEAR

Names and symbols of the months used by the Camp Fire Girls

III

THE special thing to remember about the Camp Fire Girls, it seems to me, is that these young people appear to be filled with the purpose of



CAMP FIRE GIRLS AT THEIR COUNCIL FIRE

making interesting adventures out of even the most humdrum duties at home and in school. They seem to realize that there is a great deal of work to be done in the world — so much, indeed, that there are only a very few people who are not busy with something important; and that it is none too early for a girl to learn how to do her share. When one comes up to be made a Fire-Maker, for instance, she shows that she has won

twenty "Honors" in work which she herself has chosen to master. Also, that she has learned how to prepare meals for her Camp Fire, that she knows how to darn stockings, and that she keeps a cash account. She has to prove, too, that she keeps in condition to do her work by sleeping in a room with open windows, by taking lots of outdoor exercise, and by going without candy and sodas between meals. This is not all that is asked of such a girl, but it is enough to show you that she understands what it means to work, to keep well, and to be thrifty.

One more very valuable lesson that the Camp Fire Girls learn is how to get along with other people. They come to learn the meaning of team-work and fellowship, and how to give up their own personal wishes when this is necessary. There is no better lesson in unselfishness. We all know that nobody likes selfish people. I, for one, never met a Camp Fire Girl who could be called selfish.

*Aloha Camps*

QUESTIONS AND PROJECTS

1. Where were the Boy Scouts and the Girl Scouts organized?
2. What is the aim of the Girl Scouts?
3. Do you think that a girl should be a good citizen if she keeps the Scout laws faithfully? Why?
4. What are some of the things that the Girl Scout learns in common with the Boy Scout?
5. What are some of the things she learns in order that she will be a good home-maker?
6. Would you like to join the Scouts if you are not now a member?

7. What are the aims of the Camp Fire Girls?
8. How are they grouped?
9. Study the aims and the watchword of the Camp Fire Girls and see if you think they seek health and happiness?
10. How do the girls choose their names and symbols?
11. What two valuable life lessons do the Camp Fire Girls learn?
12. Would you like to be a Camp Fire Girl? Why?

CHAPTER XIV

GARDENS AND SMALL STOCK

How we love to have something of our very own and a place to put it in! A drawer in our room where we can store our most precious treasures, a corner of a shelf where we may keep our favorite

books, an end of the workbench sacred to our personal tools; they are all precious because they are our own.

But nothing else quite fills this longing so completely as a little piece of ground of our own, a garden. It need not be very big; a little patch ten or



Community Service

A GARDEN OF HIS OWN

twenty feet square, which your father or uncle will spade up for you or set off from the big garden, will grow for you a nice variety of crisp, fresh vegetables.

Gardens are just made for children, not only because working over the fresh spring earth, purified by the winter's frosts, in the soft spring sunshine, is very good for you and makes you grow like the plants you are tending, but also because the fresh green vegetables and juicy tart fruits and berries which grow in them contain wonderful life-essences or growth foods called "vitamins," born of the sunshine and the soil, which are absolutely necessary to keep you healthy and growing. These vitamins are not fuel or "coal" foods; they give no "gas" to your body automobile; but they are like the sparks which explode the gas and keep the cylinders chugging and the engine going steadily. Some are found in milk and butter and eggs, and are called the "growth-vitamins." Young animals which do not get enough of them stop growing. Others are present in fresh vegetables and fruit, such as tomatoes, spinach, and cabbage.

Men have known for many years that sailors on long sea voyages who ran out of vegetables and fruit would get a disease called "scurvy," which loosened their teeth and made their gums sore and their joints painful, so that they became extremely sick and even died. The famous explorer of the eighteenth century, Captain Cook,

discovered that the disease was due to shortage of greenstuffs, and that even the sickest of the sailors would get better when given plenty of vegetables and fruits. So he was very careful to take in fresh supplies of these at every port, and on his later voyages carried with him bottled lemon juice in case of having to go too far between ports. So successful was this that the British Board of Trade for many years required all ships sailing on long voyages, as around the Cape of Good Hope or Cape Horn, to carry supplies of lemon juice, or, as they then called it, "lime juice." These ships were thus known as "lime-juicers"; and, before long, British sailors were nicknamed "limies," a name which still clings to them. No one knew, however, until just recently what it was in vegetables and fruits which was so literally "vital" to health. Now we know that it is the "vitamins," or "vitality" foods.

For many years, too, our mothers and grandmothers knew that spring greens were particularly good for children. In the days before the fast expresses brought fruit and vegetables up from the South all winter, the children had had but little fruit or fresh greens after January. This just shows how wise mothers often are, for now scientists have discovered in these

simple greens the wonderful vitamins, or life foods.

So begin very early in spring planting your lettuce and cress or peppergrass and tomato seeds in shallow boxes of earth near a south window, in order that they may be an inch or two high and ready to plant out in the ground when it is warm and dry enough. You may be sure that you are sowing health for yourself and your family, as well as making a very pleasant addition to your bread and butter and meat and potatoes.



SOME SCHOOLS GIVE INSTRUCTION IN GARDENING

Perhaps you are fortunate enough to have a course in gardening in your school. In that case your garden instructor can give you all the help

you need. But no boy or girl need refrain from having a garden, for many agencies are ready to help. As to just what to plant and when to plant it in your locality, and what varieties do best in your particular soil and what special fertilizers are needed, the Department of Agriculture at Washington and your State Agricultural College, or nearest Agricultural Experiment Station, publish admirable pamphlets and bulletins in simple language, giving you just the information you need. These can be obtained by writing for them. Many are free and others may be bought for very low prices. Some of your local papers may publish once a month a garden calendar, giving the kinds of seeds to be planted each week in your county, and other garden work to be done. Or your father or some wise gardener or farmer that you know will tell you.

Of course, you will want a row of lettuce, for this, in addition to the vitamins, improves the appetite, helps to keep your blood from becoming acid, and is a better blood-purifier than anything you can buy in a bottle. A couple of rows of early peas and another of bush-beans come next, for these contain valuable proteins or vegetable meats. Then you might have a couple of rows of early sweet corn. Golden Bantam is a splendid

sort, because its sweet delicious juicy kernels are almost like a drink of vegetable milk. One row each of spinach and of small or soup carrots are very desirable, because they are both very rich in



A SUCCESSFUL BACK-YARD CORN-PATCH

vitamins and contain iron for your blood. A few hills of cucumbers give good returns in health. They help to cool your blood at the hottest season of the year, are a most appetizing addition to a picnic lunch or supper, and are not indigestible if eaten slowly and well chewed, except to a few unfortunate people to whom they are poison food. Some of you must try to find room for half a dozen or a dozen tomato plants, because

this great crimson "berry" or "vegetable fruit" may be called the Queen of the Vitamins. It has all of the different kinds of vitamins combined and in good quantity. If you take good care of your tomato plants and fertilize them well, supporting them on racks or stakes, they will keep on bearing right up to hard frosts. Then, if you pull up the plants, bring them indoors, and hang them up in a cool dry place, the tomatoes will keep fresh almost to Thanksgiving.

One of the first things you will discover when you make your garden is that plants need food just as you do. This food is called "fertilizer," and must be mixed with the soil so that the plants can take it up with the water through their roots. Well-rotted barn manure is a very good fertilizer, but it is likely to contain a good many weed seeds. For your purpose probably the best sort will be the so-called "commercial" fertilizers. Your garden pamphlets will tell you how to use them. They are mainly made up of three things: *potash*, which is found in wood-ashes and in certain rocks; *phosphate*, from bones and other rocks; and *nitrate*, from the wastage of our great meat-packing plants, or from beds of "saltpeter" in Chile. When you come to study chemistry and physiology, you will find that nitrate, built up by

the plants and eaten by the animals, forms the active life-stuff of our bodies, our muscles, glands, nerves, etc. Phosphate helps to form our bones, our brain and nerves, and the kernels of our body cells. Potash is found in our blood.

Our wonder-working garden plants are soaking up these necessary substances from the soil all the time that they are growing. Then, by catching the sunlight in the soft green of their leaves, and putting it to work, they build up life-stuff and blood-foods for the use of our bodies. At the same time they are absorbing from the air a gas, *carbon dioxide*, the same that we breathe out of our lungs, and by combining it with water from the soil they build up starch and sugar for our food. You can learn a great deal of chemistry and particularly the chemistry of life from your garden.

You will also find that your little plants have enemies of their own, usually insects or worms. These enemies are very selfish and try to get the plants for their salads before they have grown big enough for yours. As plants, of course, cannot run away or shake off these bugs, you will have to be on the lookout for them and pick them off, or scatter carefully around the young sprouts powders that insects do not like, sometimes lime,

sometimes ashes, or sulphur, or blue-vitriol, or tobacco, for nearly all insects show very good sense in hating tobacco like poison. If you can protect the young shoots in this way until they have grown to a fair size and strength, these insects cannot do them serious harm. You must keep up your fight against the plant enemies all summer, however, if your garden is to be very successful. By following your garden on through the summer vacation when you have more time, you may be able not only to get splendid exercise in the open, building up just the muscles you will need for football and athletic sports, but also to earn quite a little pocket-money as well, and perhaps start an account in a savings bank.

Some of you will want to have some useful bird or animal pets as well as plants. If you can persuade your mother to get you some chickens (young hens are best) and your father to let you fix up a place for them in the barn or shed, you will find them very interesting to watch and take care of. You can build a little house for them out of a packing-case or piano-box, with tarpaper for "shingles." They will need a perch to roost on and nest-boxes to lay in, and a little run or yard to exercise and scratch in, closed in with wire netting or laths.

Hens are very useful to have because they will eat up much of your kitchen and table scraps, and in return lay fresh eggs for your breakfast. Eggs have a great deal of the valuable growth-vitamin in them. You must remember to keep two things out of the table scraps for the hens —



HENS ARE VALUABLE AND USEFUL PETS

onions and eggshells. The onions will make the eggs taste unpleasant, and the eggshells may start the hens in the bad habit of eating their own eggs. Chickens fit in very well in another way, for they need plenty of greenstuffs, and, when you are thinning out the plants in the rows in your garden, they will be very glad to

get them and a good many of the weeds you pull up as well. Grass and clover are also very good for them.

Like yourselves, they need to be kept clean to be healthy, so you must brush out their houses



Boy Scouts of America

CHICKENS NEED GOOD FOOD AND A CLEAN HOME

and rake up their runs often, and give them plenty of pure water to drink in clean pans, or drinking-saucers, or metal "fountains."

You will probably find some of the smaller egg-laying breeds best, like Leghorns or Minorcas, because they don't require so much food and give all their attention to laying without so often stopping and wanting to sit. Several of the larger laying breeds, like Plymouth Rocks or Wyan-

dottes or Rhode Island Reds, are extremely good if you have plenty of room and food for them.

Chickens are very fond of milk, which gives them lime for the shells of their eggs. When they are laying well, they should have some crushed oyster-shells, or crushed bone, or other forms of lime to supply a good firm coating for their eggs.

Perhaps you may be able to get a small incubator heated by a lamp and watch your eggs hatch, which is very interesting. The Egyptians hatch their eggs in boxes in the middle of piles of "sweating" manure just by the heat of its decay. But it takes a great deal of skill and training to do this. You must almost be an Egyptian to know how, and they have been at it for thousands of years.

Rabbits are also very useful and interesting pets to keep, and take far less room and variety of food than chickens. All they need is a fair-sized cage or hutch and some hay and bran and water and a little milk. In spring and summer you should give them fresh grass, dandelions, clover, and other greens, which you can gather or cut for them by the roadside and round the borders of the garden. Some of the larger breeds are

almost as good as chicken for Sunday dinner, and others have been grown for their fur until it is so thick and fine and of such different colors, black and white and silver-gray, that it is quite valuable for making children's collars and tippets and little muffs.



Community Service

A PROMISING GARDEN AND SOME INTERESTING PETS

You see that from your gardens and pet stock you can get most of the foods which are needed to balance the ration or diet, as well as learning many useful lessons in taking care of your own health, by keeping the things that you grow healthy and vigorous.

*Kodak*

AT HARVEST-TIME

QUESTIONS AND PROJECTS

1. Why should every boy and girl have a small garden if possible?
2. What is the food element that we get from fresh vegetables and fruit?
3. What happens when men are deprived of this food?
4. Perhaps your teacher will let you have a window box or a table in a sunny place where you can start some seedlings.
5. Make a plan of your garden showing what vegetables you are going to plant and how you are going to arrange the rows.
6. Where can you get helpful information about gardening?
7. What are the best plant foods or fertilizers?
8. How can you protect your plants from insect pests?
9. Why are chickens good farm stock for young farmers?

10. What do they require for shelter and food?
11. Why are rabbits and hares also good stock for a beginner?
12. Will your health benefit from working in your garden and with your stock? Why?

CHAPTER XV

HOW TO PLAY BASEBALL

I

WHEN the warm sun of spring begins to shine and the snow melts from the playgrounds, every American boy and many an American girl starts to hunt in the corner of the closet or in the attic store-room for bat, ball, and baseball gloves. They don't even wait for the sun to dry the muddy ground, but begin by playing catch in the street in front of the house, or in the back yard, or on the playgrounds.



Kodak

A SURE SIGN OF SPRING

There is no reason in the world why girls shouldn't play baseball and enjoy it just as keenly as boys do. Indeed, since they have begun to wear sensible and comfort-

able clothes of the Girl Scout type, they are coming to play it eagerly and well, and some schools have baseball teams of girls as well as of boys.

Of course, you will all play the game for the fun and the pleasure of it, but the better you play it the more fun it will be. Many of you, too, have a secret hope that some proud day perhaps you may be able to "make" your school nine. It is not too soon to look forward from the fifth or sixth grade to the time when you may possibly do this.

Probably the two greatest troubles which a boy or girl has in learning to play are first that their fingers seem to be all thumbs, and the ball simply will not stick in their hands when they try to catch it, and everybody shouts, "Butter-fingers!" or "Muffer!" Then, when a ball is thrown or batted straight at you and comes whizzing so fast that you can hardly see it, it is hard to face it coolly and handle it cleanly. At such times, do your best to stop it without flinching or ducking or fumbling — and keep on trying. The only thing needed is constant, everyday practice. This alone will help you to get the baseball feeling, to gain confidence in yourself and to lose all fear of the ball. You have often seen swift liners, as low fast balls hit from the bat are called,

whizzing straight at the third baseman, and probably a cold thrill ran through your veins as the nimble baseman jumped directly in front of the ball and fielded it quickly and easily. Practice made him sure of himself, and as unafraid of the ball as if it had been a bean-bag.

II

HERE are a few hints on how to become a good player, how to bat, how to field, and how to pitch.

The surest way to "make the team" is to be able to bat well. Even though your fielding may not be as good as it should be, if you can really bat well, you are almost sure to make the team, because making "safe hits" is the greatest help in scoring runs. Hold the bat loosely with the right hand above and firmly with the left below, unless you are left-handed, when, of course, the left hand goes uppermost. Pick out a bat which feels to you of the right weight, which you can swing easily and which does not "hold back" as you swing it. It is a good idea to have a favorite or a "lucky bat," because you are likely to have more confidence with it at the plate. Even though it may be no better than the others, it is the one you have become accustomed to, so that it fits your hand best.

In learning to bat, it is best to begin practicing with a slowly pitched ball, and have the pitcher gradually speed it up. Stand right up to the plate and never let the ball scare you. Your eyes should be, not upon the bat, but upon the



THE GAME PLAYED BY EVERY AMERICAN

pitcher. As he “winds up,” keep cool — he’s only trying to scare you — and make up your mind just to meet the ball with an easy swing, rather than to try to knock it over the fence.

The “grounder” is hit by striking the ball with a slightly downward swing of the bat; the “fly,” by a slightly upward swing; and the “bunt,” by letting the ball just tap your bat, which should be slightly drawn back as the ball strikes.

Lastly, be natural at the bat. Your own form

is the best form for you. It is far better than trying to copy the form of some one else.

Now, a few words about base-running. Getting away from the plate "with the crack of the ball" often makes it possible to reach first safely when it looks impossible to make it. Always run a batted ball out. To stop halfway down to first or to slow up is a baseball sin. Run down to first, and run with all your might. If you can, beat the throw to the base. Your speed will perhaps worry the fielders into an error; it will, at least, show that you have the fighting spirit of a good team.

III

FIELDING is a matter of alertness, judgment, and speed. The best thing about baseball is that brains and skill count for more than weight. The little fellow who has practiced faithfully has a better chance than the bigger boy who depends upon his strength alone, and who thinks he has no need to practice. The only way to develop skill and good judgment in catching and fielding is to keep your eye constantly on the ball, figuring out its speed and direction, and just where it is going to land. This calls for a good eye, cool judgment, and real brains, the same sort that

you use in your studies, in learning a trade, or in engineering. A good ball-player ought to be a better student than a poor one, and a brainier, more successful man or woman in after life.

One word of warning to avoid possible accidents: When trying to make a catch, never hold your hands with the fingers pointing in the direction from which the ball is coming. Always try to hold your hands at right angles to the line of flight of the ball. Otherwise, if you fail to guess exactly where the ball is coming, it may land right on the end of one of your fingers and put it out of joint, or even break it, or tear off the nail.

Throwing the ball to the bases accurately and with speed is quite as important as perfect catching. Here, again, judgment and a cool head are called for. Straight and accurate throwing is the first requirement. Wild throws in an important game are costly. You must train yourself to decide instantly where to throw the ball, to "get it away" quickly, and to throw it to the proper base fast enough to put the runner out. Fix your eyes upon the baseman and throw with the quickest possible swing and least possible waste motion. The "short-arm" throw that professional players use is the best model for you to

copy. Enough time may be lost in an extra swing of the arm to let a player make his base — and perhaps win the game. Practice catching or picking up the ball and throwing it at a mark with the fewest possible movements and in the shortest possible time.

IV

THE pitcher seems to hold the key to the success of most teams, and a good one can often make up for poor playing in the field. You hear a great deal about curved balls, incurves and outcurves, “grapevines” and “twisters,” but in the long run a straight, fast ball placed where you want it is the most effective of all, especially if you can now and then pitch a slow ball in among the swift ones. Professional pitchers with this “change of pace” are able to deceive the best batters; and they put less strain upon their arms. In learning to pitch, you should learn to use not only the arm, but the body as well, throwing your whole weight after the ball. Swing the body with the arm as the ball is thrown, and you will be surprised how much greater speed you will develop. Keep your eye on the plate, and learn to “put the ball over.”

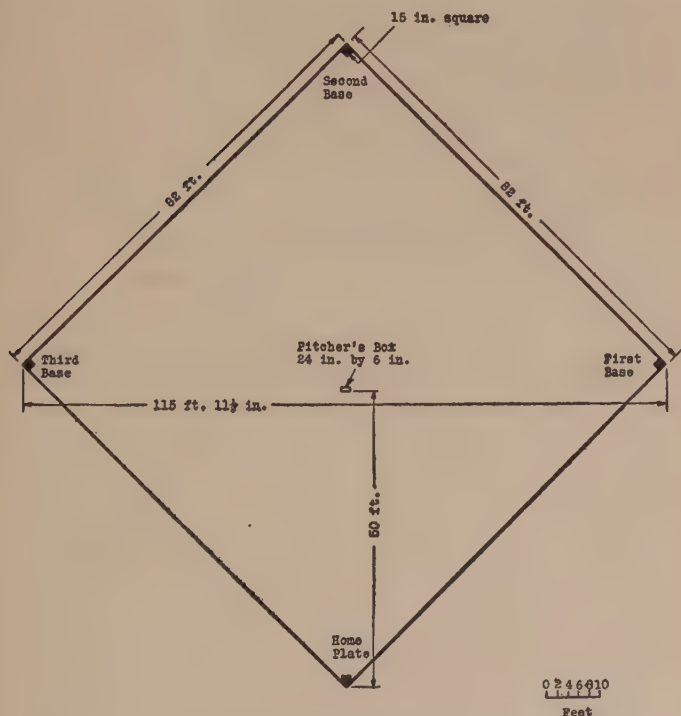
Do not overdo it and strain your arm trying

to put more speed into the ball than you really have. How much strength should you use? Only as much as can be used without paining your arm. Often fine pitchers ruin their arms by forgetting this and trying to put more speed into the ball than they can with safety. They may even break some of the fibers of one of the muscles of the arm. It is far better to have good control of the ball, and to use your speed with good judgment, than to throw out your arm and be of no value to the team for a long time. The fastest pitcher in the world without control of the ball is of no value.

Pitching curves is largely a matter of holding the ball in a particular way and twisting or snapping the wrist so as to set it twirling on its own axis. You do not need to worry about curves at first, however. There will be plenty of time to learn about curves and to practice them later after you have grown into your full strength. If you can put the ball across the plate right in the middle, or over the inner or outer side, and high, or low, or medium, as you choose, and do it with fair speed, you will be able to keep most batters from hitting safely very often. That is all the most skillful pitcher can hope to do.

V

WHILE the only way to become a good player is to "play ball" at every reasonable chance you get, you can easily see that your body engine must be in first-class trim before you can begin to



THE BASE-BALL DIAMOND

The major leagues' joint-rules committee fixed eighty-two feet as the proper distance between bases for boys under sixteen. The diamond for playground ball may have as little as thirty-five feet between bases.

play, and be kept so all the time that you are learning. There is one curious thing about baseball, that you cannot possibly get all the strength and speed that you need for it just by playing the game itself.

So you should not give up all your spare time to baseball; instead, practice hard at foot-racing, or starting from a mark at the word "go." This will train you to get away from a base like lightning. Playing games like tag and prisoner's base will give you plenty of quick turning and dodging, which will help in running bases. As has been said before, in order to play one game well, you must play all the games.

In the same way you need to build up strength in your arms and shoulders, so as to put some speed into your throwing and force into your hitting, because you will be a long while developing that strength in the amount of exercise you get in a game of ball. Every kind of game or exercise or gymnasium work which builds up your arms and shoulders and back, such as wrestling, or tree-climbing, or work on the parallel bars or the horizontal bar, or rowing, or chopping with an axe, or working with a rake or a hoe or a spade, will help to make you a better batter and thrower.

But there is something which is more impor-

tant still, and that is clear, good eyesight. Not infrequently children find that they have great difficulty in learning either to hit or catch a ball because they seem unable to calculate where it is coming. This causes them great annoyance, and their playmates on the team may even blame them for being careless or stupid, when the real reason is that their sight is poor. So, if you have this trouble go at once to your family doctor, or to the school doctor or school nurse and arrange to have your eyes examined. If you are fitted with proper glasses, these will relieve you of the whole difficulty; and in many cases, glasses need be worn only for a short time, especially if you begin wearing them young enough.

Others may have difficulty in getting the ball away quickly enough when fielding it, or in starting to sprint for first base after making a hit. This may be due to anything which makes your head ache or makes it feel dull and uncomfortable, such as indigestion or biliousness, or lack of proper sleep, or not enough air in your bedroom. Every ball-player should take steps to avoid these things. If you have adenoids, or little spongy growths up at the back of your nose and roof of your throat, you will not play well. By going to the doctor and having these treated or

removed, it may make a wonderful difference in your comfort and in your quickness and ability to play well. Also — and this is not of least importance — this help from the doctor will enable you to do your school work more quickly and easily, and prepare you to succeed in the great “game of life.”

QUESTIONS AND PROJECTS

1. Has your grade a baseball team? You can easily organize one and get the practice you need to make the big team later.
2. What is the best way to lose your fear of the ball and to become a swift, accurate player?
3. What are the suggestions given here to help you improve your batting?
4. When you are trying to make a base, what good rule should you keep in mind?
5. Why does fielding call for great judgment and speed?
6. How can you become a good fielder?
7. What is the aim of a skillful pitcher? How can you become skillful?
8. Can you get the strength and speed you need to become a good player by playing just baseball? What is the best way to train?
9. Does a good baseball player take care of his health? Why?

CHAPTER XVI

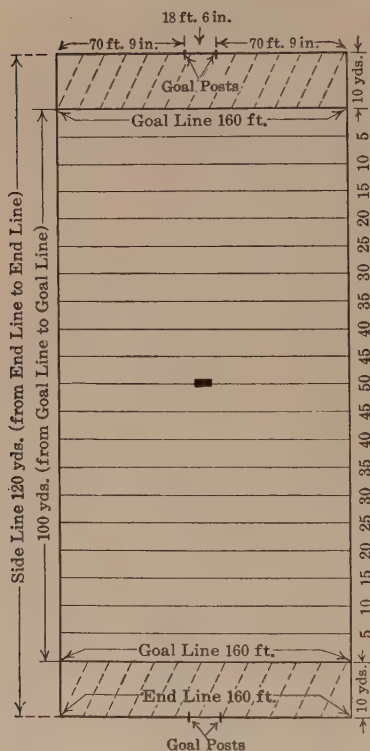
HOW TO PLAY FOOTBALL

I

ONE of the best means of building up your heart and expanding your lungs and developing the muscles of your legs and arms and back, indeed, almost every muscle in your body, is our great popular fall game, football. From the muscles that cock the ears to catch the signals down to those which dig the toes into the ground when you plunge into the scrimmage, every muscle in the body is kept busy. However, as every football player knows, before you try to play you must get your muscles ready for the strain.

Every boy and every girl knows that the game of football consists of one team or group trying to rush a ball through, or around, or over, another team, until a white line called the "goal" line is crossed. The idea is simple enough, but, as any one who has ever played the game can tell you, to carry it out is quite another story. It takes eleven players to make a full team, though a smaller number can play a perfectly good and interesting game. The standard field is one hun-

dred yards long and fifty-three yards wide, though any back yard or fairly level pasture of sufficient size, with a couple of poles and a cross-



THE STANDARD FOOTBALL FIELD, OR
"GRIDIRON"

In order to keep possession of the ball a team must gain ten yards in four plays. A touchdown is made when a team carries the ball across the goal line. To score a goal the ball must be kicked over the horizontal crossbar (which is ten feet from the ground), and between the upright posts.

bar stuck up for goals at each end, will give just as much exercise and fun as the most carefully rolled and leveled field.

The ball is oval in shape, made of leather covering a rubber bladder blown up very hard. But if you happen not to have the price of such a ball, do not let that bother you — an old salt bag stuffed with dry leaves, rags, or torn-up paper will serve the purpose quite as well.

To begin the

game, the ball is placed in the center of the field, just halfway from each goal, and at the signal is kicked by one team toward the goal of the other team, who are arranged at different distances in front of their goal. The player who catches the ball rushes back toward the



Community Service

"FIRST DOWN!"

team that kicked off, and does his best to break through them and reach their goal, while they, as promptly as possible, tackle and throw him, because play cannot be stopped until the ball touches the ground. As soon as this has happened, the several players who have helped to stop the runner pull themselves out of the heap,

and the referee calls "First down." Then both teams line up on opposite sides of a line drawn through the spot where the ball touched the ground. At the signal for play, the team which has the ball plunges forward in the attempt to push their opponents backward toward the enemy goal. This usually means very slow progress, and, if they do not succeed in forcing the ball ten yards in four successive downs, the ball is forfeited to the opposing team.

Usually two or three rushes of this sort are made to try out the relative strength of the two teams. Then, if the team which has the ball gets the best of it by superior strength or weight, this hammering or steam-roller process is continued, and the ball is forced steadily down the field. But if the "quarter-back," who gives the signals, finds that his team is unable to gain enough ground in this way, he concludes that it is safer to try an end run. The "center" snaps the ball back to the quarter-back, who either tries to run with it himself or passes it to another player behind the line for the open play, who either tries to rush the ball or kick it.

If the "back" who receives the ball starts to run with it, around one end or other of the line, according to the signal which has been given, the

other backs and the line men of his own team try to make a sort of flying screen, called "interference," in front of him, while the players of the other team do their best to tackle him and stop him. Once in a while, he will be caught before he even reaches the line where the ball was put into play, and then his team loses ground by the move. But, on the other hand, he may break through and run clear down to and over the goal line, and, by touching the ball to the ground there, make what is known as a "touch-down," which counts six points. If a kick or punt is made instead of a run, the ball goes, of course, a long way down toward the goal of the opposing team, but it is almost certain to be caught and held by one of their backs, and so passes into the hands of that team, which in turn gets a chance to try for a score.

After a touch-down has been made, the team scoring it is allowed to try to kick or rush a goal. One player lies on the ground and holds the ball between his hands, while another player kicks it, if he can, over the cross-bar and between the posts of the goal. If he succeeds, he scores one point for his team.

Sometimes a team tries to kick a goal from the field, but this is usually done only when the run-

ning game fails to gain ground. In this play, the quarter-back throws the ball to one of the backs who is a good kicker, and he tries to kick it between the goal posts and over the cross-bar.



Community Service

KICKING THE GOAL AFTER A TOUCHDOWN

This requires a quick eye and a well-trained toe. It is known as a "field goal," and counts three points.

The only other way in which a score can be made is by what is known as a "safety." This is made when the team that has the ball is forced back over its own goal line, and made to touch the ball to the ground behind its own line. It

counts two points for the side that forced the safety. This does not happen very often, because a team that is driven back close to its own goal usually chooses to punt the ball up the field, hoping that the other side will not be able to rush it back.

II

THIS modern game of football is a modification of the game, which grew up at Rugby, the famous English school which "Tom Brown" attended. For this reason, a few years ago, it used to be known as "Rugby football," or just "Rugby." The old, original football, in which the ball can be kicked with the foot, or butted with the head, but may not be touched with either hand or arm under severe penalties, is now known as "Soccer," and has not become as popular in this country as it is in England. This name is an absurd contraction for "Association," because the game was originally played by associations or leagues, while Rugby was played only by teams from colleges or public schools. Soccer is not as strenuous and exciting as Rugby, but is a capital game and for general school play is quite its equal; in fact, in many respects, superior to it. It calls for speed, quickness, and good wind, instead of de-

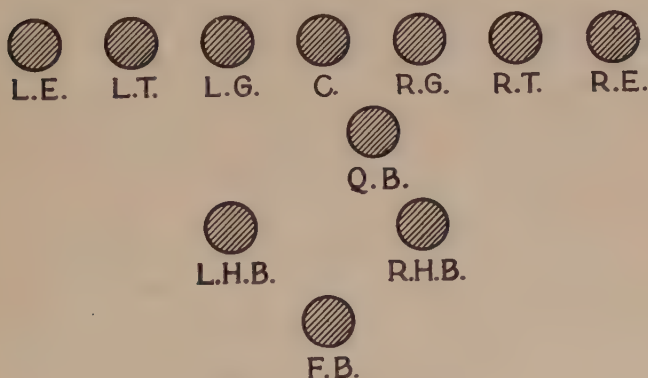
pending so much on weight and strength; it can be played by girls just as well as by boys; and, strange as it may seem, it gives more exercise to every member of the team than Rugby does.

One of the charms which makes Rugby so much more popular than Soccer is the chance which it gives for team-play and generalship and skillful tactics. The number of different formations and plays is almost unlimited, rushing the ball around the end, or through the middle, pretending to attack one end of the line, and then plunging through the other, feints or "fake" plays of all sorts, with complicated signals for each.

For most games the simpler formations and plays are best. Particularly for younger players simple plays well understood and well carried out will win the most games.

For the benefit of those who are beginning in the game, I will explain that the seven forwards or players who form in line are the "center," who puts the ball into play; two guards, one on each side of him; then two "tackles"; and two "ends," one at each end of the line. If you will look at the diagram on the opposite page you can see at a glance just where the different players are stationed. In the usual formation, the quarter-

back stands directly behind the center, to receive the ball when it is snapped back to him by the center, while a few yards behind him are stationed the left half-back and the right half-back and the full-back, also in line. Here are some of the best plays for beginners.



HOW THE TEAM LINES UP

The right half-back may rush diagonally for the left end of the line taking the ball from the quarter-back as he passes him; or the left half-back may rush the ball to the right side of the line, his own men, of course, opening up to let him through and forming "interference" on either side of and in front of him; or the full-back may rush through between a guard and a tackle, trying to break the line; or the quarter-back may run with the ball himself, breaking through on

either side of the center, or going round one of the ends.

The straight line plunges may also be worked from this formation. The quarter-back receives the ball and makes a quick side pass, to any of the backs, who comes plunging straight ahead through an opening made by one of the tackles or guards about two thirds of the distance from the center.

Cross-cross plays are also very satisfactory ground-gainers if not worked so often that the other team gets ready to stop them. In these the quarter receives the ball as usual from the center, and passes it to one of the backs, who is rushing, say, toward the right end of the line. This back then turns quickly and passes it to the other back, who rushes it toward the left end of the line. Occasionally, too, a team may have the entire right or left side of the line rush around the end in order to form an interference for one of the backs who is dashing around that end of the line.

In the "forward pass" the ball may be thrown by the quarter- or half-back to some player who has run through the opponents' line, and is waiting to catch it. If well and skillfully worked, it is a very effective and brilliant play, but the risks

of its going wrong are great. The play is made in this way: the quarter-back takes the ball, runs about five yards behind the other backs for shelter, and then throws it over the heads of his team straight into the hands of the player who has got into position to receive it, some distance into the enemy's territory; or he may give the ball to the full-back or one of the half-backs, who will run either back or to one side and throw it forward to the proper player.

III

THE quarter-back should be the keenest and quickest thinker on the team. It is he more than any other who might be called the general or the brains of the team, because he selects the plays and calls the signals. He should know something of the tactics of the game; for instance, he should know that it may be best to kick on the first down if his team is dangerously near its own goal line, because a fumble in rushing the ball might allow the other side to get it, or it might lead to a safety. Also, that it is best to kick after the third down, if, say, eight out of the ten yards necessary have not been gained. Line plunges and guard and tackle plays are the most satisfactory when only a yard or two are needed near the

goal line. Forward passes may best be used in the center of the field, and this is the proper place for end runs and fancy plays, where you have plenty of leeway and can afford to risk losing a few yards without being brought dangerously near your goal line.

All the line men are supposed to know every signal just as well as the backs, in order that they may open holes for them to go through, or take place in the interference and runs. It is also their duty to break through the opposing line and upset the back field of their opponents as often as possible.

In brief, a game of football is one where brains, weight, speed, and a thorough mastery of some few plays and formations, such as here outlined, make a winning team. With these, and a keen sense of playing your very best, not for and by yourself, but with and for the team, a team will make a good record.

It is very plain that football calls for all the strength and speed and nimbleness that you can possibly build up. But you cannot possibly get these simply by playing the game itself. You might play for an hour, and, if you are a back, have scarcely half a dozen chances to run with the ball and show what you can do in the way of

sprinting and dodging. If you are in the line, you will have somewhat steadier work in making openings and joining in the interference, yet it has been estimated that only about one sixth of the time is occupied by actual play, the rest being taken up by straightening out after a scrimmage, and lining up again. So, as a real building-up exercise, football, like baseball, is not so good as the work you get in training for the game.

It is absolutely necessary to build up the speed that you need by foot-races, and nimbleness and quick dodging by tag and prisoner's base and duck-on-the-rock, and similar games. You will have to develop the strength that you need for running with the ball, or for holding the rushes of the other team, by arm, back, and leg exercises in the gymnasium, or by rowing or wrestling or chopping wood. Swinging the axe is one of the finest exercises known for building up all the muscles of the arms, shoulders, back, and waist. Digging with a spade gives you almost exactly the right muscular training for plunging low through the opposite line, and pushing the lawn-mower is a splendid preparation of the very muscles that you will need in tackling. If you waited until you could develop these muscles just by playing the

game itself, every fall, the snow would be a foot deep before you would be halfway fit.

The one drawback to the game is that weight and size count more than they should to give every boy a fair chance to become a good player. The average weight, for instance, of a crack college team is often close to two hundred pounds, and the average height nearly six feet, and we can't all grow to be giants like that. But just weight and "beef" alone are not enough. There must be speed and quickness and good judgment as well, and any boy of medium weight and size, who keeps himself tough and wiry and hard, who is a quick dodger and has a good football head, will have a far better chance to grow into a good player than a boy ten or fifteen pounds heavier and half a head taller who relies on his weight and size, and does not take the trouble to train himself properly.

QUESTIONS AND PROJECTS

1. Why is football such a healthful outdoor sport?
2. Even if you never expect to play football why should you know something about the game?
3. What is the size of a standard football field?
4. How many players are required?
5. What is the first play in the game?
6. When does a team forfeit the ball to the opponents?
7. How may a team score a touchdown?

8. After a touchdown has been scored, how can a team make an additional point?
9. What is a field goal?
10. How does a team make a "safety"?
11. Where did we get our games of Rugby football and "soccer"?
12. Draw diagrams of the plays described in this chapter. They will help to make them clear.
13. Why does the player selected for quarter-back have to be a keen, quick thinker?
14. Do the line men have to be alert? Why?
15. What is the best way to train in order to be a good football player?

CHAPTER XVII

WINTER SPORTS

WHAT is it that makes you jump up and wave your arms about and shout "Hooray!" whenever you look out of the window and see the first snowflakes of the season sifting down from the gray sky above to the brown earth? Why, the



Kodak

AFTER THE FIRST SNOW-STORM

thought of the good times you are going to have snowballing and coasting and skating. Those soft white flakes may later block the railroads and drift up the streets and roads so that you can hardly get to school, but that is not what you are cheering about. Even the thought that they will

probably provide you with a lot of fine exercise shoveling out paths and clearing sidewalks does not explain your enthusiasm.

If you are blest with a good home and warm clothes, as most of us are in this fortunate land, the snow and winter's cold will do you far more good than harm. They will brace your muscles, redden your cheeks, make your heart beat faster, and the blood tingle through your veins, till you feel fit for anything, and will make you want to run and shout and wrestle for the sheer joy of being alive.

We grown-ups have quite changed our feelings toward winter in the last ten or fifteen years. Formerly, when houses were not so well built and well heated, most people were afraid of opening a window for fear of chilling the whole house. We hurried from home down to business, and from business back to our homes, as directly and quickly as we well could, so that we got too little fresh air in our lungs and very little exercise in the open. No wonder we thought winter the unhealthiest time of the year, and dreaded its coming!

Now, however, when we get plenty of fresh air in our houses day and night and have eagerly taken up winter sports of all sorts, skating, to-

bogganing, and skiing — when the snow is on the ground, and walking and golf when it isn't — we find that we can keep as vigorous, healthy, and in as good condition and training in winter as in summer.

The sturdiest and most vigorous nations of the world are those who live where the snow falls in winter, and who get the bracing and hardening effects of play and work in the frosty air. The country in which the people live longer on an average than anywhere else in the world is Sweden, whose northern boundary reaches up to the land of the Midnight Sun and long, hard winters.

If you sleep with your windows open, and snowball or skate or coast downhill every day, and do your share of shoveling snow vigorously and cheerfully after a storm, you will keep growing and thriving all winter, and come out in the spring in better condition and training for the summer games than you were in the fall.

The most striking instance of the new popularity of winter games and sports is seen in the way in which the summer hotels in the hills and the mountains, both in this country and in Europe, are beginning to keep open all winter. In Switzerland, for instance, that beautiful nest of high mountains which is the source of half the rivers

of Europe, the mountain hotels used to be open only in the summer and closed all the rest of the year. Gradually they began opening in the winter as well, and now they are crowded full of happy seekers for exercise and sport on the snowy slopes in the crisp mountain air. In most parts of happy America we can get these splendid winter sports at our own doors. In the last few years dozens of summer and country hotels near our larger cities are keeping open for the winter sports, with great benefit to our national health.

Now, what are these cheerful, bracing sports in the stinging winter air and bright frosty sunshine, which turn winter for us into one of the healthiest seasons of the year, and how do they build us up?

First and foremost of all comes our childhood favorite, snowballing. No bats or rackets or suits of any sort are needed — just plenty of good clinging snow and a group of healthy all-alive boys and girls. No other sport gives you more vigorous, chest-building exercise in a shorter time, and makes your cheeks so red and your eyes so bright, and sends you home with a keener appetite for dinner or to school with a clearer, fresher mind for your lessons. It gives you splendid training in quick, straight throwing for

all the ball games, and develops loyalty to your friends and classmates, pluck and a sense of fair play, as few other games do. It's a grand running game that can be played all the way along the road, as you catch up handfuls of soft snow and pelt one another. But never throw hard at those who are smaller or less skillful shots than you are, nor make the snowballs too hard and solid. Least of all must you mould pieces of ice or dirt into them, because this may cause bad accidents to eyes or faces, and lead to hard feelings.

In some schools, where they pay great attention to physical training and make it a regular part of the program, when a fine fall of good snowball snow comes, pupils and teachers all turn out into it at recess, pelting and racing and building snow forts to attack and defend, so valuable do they regard this hearty play in the snappy winter air.

Next comes that splendid sport, coasting or tobogganing, the nearest thing in the world to flying. When you push your sled over the edge of the hill or fling yourself down with a clatter, the ground seems to shoot out from under you, and you draw a great gasping breath of delight which fills every corner of your lungs with pure keen winter air, and which then comes out again in a

whoop of joy and excitement. No chest-developing exercises ever invented can compare with it.

As you fly down the smooth glassy course, every muscle is tense to cling on and steer; every sense on the lookout to keep from flying off the track or charging into other sleds or being run into from behind. No finer training is possible for



Narragansett Machine Co.

"THE NEAREST THING IN THE WORLD
TO FLYING"

keen sight, steady hand and foot, sharp ears, and quick decision, the very qualities needed when you grow up to steer a ship, drive a locomotive, run an automobile, pilot an airplane, or guide a business.

Then comes the brisk, cheerful walk back up the hill, comparing notes with the others, finding out who got spilled and who made the longest run, shouting encouragement to the down-coming sleds, until warm, half-breathless, and happy, you reach the top, turn round and go over the edge again in a thrilling, gasping, chest-filling

plunge of delight. And so on till supper-time, when doesn't everything taste good!

In many towns in winter certain hilly streets are set apart for coasting, and teams and automo-



Community Service

"THE BRISK, CHEERFUL WALK BACK UP THE HILL"

biles are forbidden to use that part of the street between certain hours. This is a very good plan, and, if it hasn't been tried in your town, speak to your father or uncles or teacher about it and see if it can't be arranged. The few serious accidents while coasting nearly all come from running into or trying to twist clear of a wagon or a car.

If you should find that you don't see the other sleds as clearly, or don't judge their position and

the speed of your own quite as accurately as the other boys seem to do, speak to your father and mother and have them take you to the doctor to have your eyes looked at. Very likely he will be able to give you some glasses which will make the outdoors look like another world to you. And you will be able to see as far and as quick and as keenly as the other boys, and your head won't ache or your eyes get tired when you play in the open. And you will read far more easily and see better on the blackboard in the schoolroom as well.

Perhaps the rush of cold air as you swoop downhill "stuffs up" your nose so that you can't breathe through it comfortably, or your hearing for what the boys on the sleds behind are shouting to you isn't as good as it should be. Then perhaps the doctor will find that you have adenoids or some other milder trouble in your nose, and a few treatments or a slight operation will clear it up and improve your breathing and your hearing. If you happen to be shorter or lighter than you should be at your age, or retarded in your grade, the removal of adenoids may make you feel like a different person and soon help you to catch up with your grade in school, and you may gain several inches in a year.

What doctors are most anxious to do nowadays is not to give you bad-tasting medicines when you are sick, though that is sometimes necessary, but to help boys and girls grow straight and strong and keen-eyed and long-winded and swift. Look upon the doctor as your best friend, the man who will help you to grow strong.

*Community Service*

THE SKATING-POND

Next in the list of winter sports come our old favorites — not only in childhood, but all our lives long — skating and hockey. The swift, sweeping dash over the glassy, ringing ice is not only delightful, but it gives us one of the finest

trainings possible in balancing and carrying ourselves well. It also exercises and brings into play many muscles which are but little used in other sports, or in ordinary life, in our legs, in our backs, in our necks. The special strains upon our ankles and the pull on the muscles going down into our feet help greatly to strengthen the arches and prevent flat-foot. As flat-foot is one of the commonest and most disabling muscular weaknesses of grown-ups, skating is a great advantage.

In many cities and towns special lakes in the parks are set apart for skating, some for younger children only, and kept swept and guarded against accidents. Also the flat, level spaces in the playgrounds, used for baseball and football teams in the summer, are flooded with a few inches of water from the hydrants and turned into skating rinks in winter. If you have no good skating places in your town, cannot you rouse interest to have such a rink made?

The addition of the stick and puck in hockey gives exercise to the arms and shoulders, as well as to the legs and back, in the skating, and makes it a most useful and strengthening winter sport. It also gives splendid training in keen, accurate sight, balancing and quick decision in avoiding collisions or blows from the sticks.

You will get very hot and perspiring from the quick, constant dashes and clashes and sudden turns of the game, and you should be careful to throw on your sweater, or coat, just as soon as you stop to rest.

From the point of view of safety, it is a good thing where many are skating to have a ladder or a couple of long sticks or poles which can be quickly pushed out to any one who breaks through the ice. It is best never to go skating alone, for you never know when you're going to strike a thin or soft spot. Least of all never take "dares" to skate as near the edge of a hole as possible, for the saddest accidents happen in this way.

In States where the snow lies thick and dry, or packs down and crusts over for weeks at a stretch, there are two other capital winter sports, snowshoeing and skiing. Both give splendid training in endurance; and both also, by their pulls and strains upon the muscles of the leg whose tendons run down into the foot, build up and strengthen its arches and prevent flat-foot.

The best clothing to wear for these games is something warm, but light and as porous as possible, so as to let a good deal of the heat and moisture escape when you get warmed up and perspir-

ing. There is nothing better than the comfortable, loose-fitting, inexpensive woolen "sports" clothing, bright-colored sweaters and blanket coats, and skirts or "knickers," and soft, bright woolen scarfs. With these, a soft knitted or cloth cap, and thick stockings inside your broad-toed, thick-soled shoes, you can defy the cold and keep as warm and comfortable out in the frost and snow as a fox or a rabbit in his fur winter overcoat.



CLOTHES THAT DEFY
COLD

Of course, when the snow is melting and sloppy you'll have to wear rubber boots or "arctics" to keep your feet dry. It is an excellent idea to keep a pair of dry stockings and sandals in your locker at school, and change and let your shoes dry if your feet get wet on the way.

If you dress right, and harden yourself by play in the open, you will be almost sorry when spring comes and the last snow melts. You will store away your skates, your hockey stick, your skis, and your "flyer" with a pang of regret that the season of glorious winter sports is over.

QUESTIONS AND PROJECTS

1. How do you feel when you see the first snowflakes and the first skim of ice?
2. How has the feeling toward the winter season changed in the last few years?
3. Why is it well for men and women to get out-of-doors in winter as well as boys and girls?
4. What is the modern winter resort like? Have you ever visited one?
5. Why is snowballing such healthful exercise?
6. Without study you can tell why coasting is such a joy. Why is it also excellent exercise?
7. If you have difficulty in seeing or breathing while playing hard, what should you do?
8. Why is skating, like swimming, one of the best sports for all-round exercise?
9. What are the safety rules for skaters?
10. In what way does one benefit from showshoeing and skiing?

CHAPTER XVIII

COMMON SENSE AND SAFETY

IN this chapter I mean to point out to you some of the safe ways of doing things at home, in school, and out of doors. I am not going to give you "Safety First" as a slogan because I do not want to make you timid as you go about your work and your play. It is a good thing to be adventurous to just the right degree. I think you will be glad to know, however, how to avoid certain risks. Nobody wants to get hurt, of course; and nobody needs to if he keeps his eyes open and uses ordinary sense. It is only when we become careless that accidents happen. So please think carefully about the various things that I mention. Remember that accidents frequently involve others as well as yourself. Do your work and play your games with the idea that nobody is going to suffer harm through any fault of yours.

First let us think about things at home. Home ought to be the safest place and the happiest place in the world. You can help to make it both of these. Probably the worst accident that can happen at home is a destructive fire. Altogether

too many homes in our country suffer from fires. Most of these could be avoided if people were careful in their use of matches, gasoline, and the various electrical appliances.

The safest matches are those that light only when they are struck on a certain part of the box. Even these should be kept out of the reach of your younger brothers and sisters. When you light one, strike it away from you; and after you have blown it out, throw it into a metal receiver — never into a waste-paper basket.

Your father and mother know that gasoline is a good cleanser for soiled clothes. They know also that it should never under any circumstances be stored in the house, or used indoors. This is because it explodes so easily except when handled in the right way. If clothes must be cleansed with gasoline, the work should be done out of doors. The safest place to keep gasoline is in the garage; and even there it should be kept in a tightly closed container, plainly labeled.

I hope you help your father keep the cellar not only clean but orderly. Many people allow great quantities of rubbish in barrels and out of barrels to collect in the cellar. This is a dangerous fire risk. Can you tell why? It is a more serious fire risk to put hot ashes into wooden receptacles. The safest way to take care of waste

paper, ashes, and other rubbish is to store them in strong metal ash-cans until they can be sent to the dump. Most cities and towns send trucks at regular intervals to collect all the rubbish from homes, stores, schools, and other buildings. How is this done in your community? Is this the best method you know of?

Your mother will appreciate it, I believe, if you will share with her the responsibility for the safe use of the electric iron, the electric toaster, and similar household devices. These little articles are great conveniences, and they are safe enough provided they are not left plugged into the light socket. The only way to be sure that the electric iron, for example, is "off," is to disconnect it as soon as any one is through using it. Fires are often caused by an over-heated electric iron setting fire to the table or the ironing-board on which it was left.

You can help to avoid painful accidents at home by seeing that no broken glass or needles, tacks, or nails are left lying about, and that the stairs and floors are kept free of anything that might trip people up or cause them to slip. Cuts and wounds may easily be serious ones, and so may the bruises that come with falls. Then there is the medicine closet. You wonder, perhaps, how that could cause accidents and what

you can do to make it "safe." Every home, of course, should have a few wisely selected remedies for simple ailments, and a good "First Aid" box. But every one in the home should know exactly what each bottle contains, and how it is to be used. Therefore every bottle should bear an easily read label, on which should be written directions for the use of the medicine. If you find one without a label, let your mother know. The safest rule to follow about using any of the contents of the medicine closet is to ask your mother first. Some medicines are meant to be swallowed; others (liniments) are meant only to be rubbed on the outside of your body. If you drank the wrong medicine, you might be badly poisoned.

You have probably heard a great deal about alcohol. For many years people were allowed to buy drinks that contained harmful amounts of this poison. In our day, the making and sale of this sort of liquor is forbidden by law. Our people are much better off without it; but I am sorry to say that some, who have little respect either for law or for the health of their bodies, make alcoholic liquors and drink them. Doctors know how much harm this does; and people generally are learning that what the bootlegger makes is really nothing but disguised poison. "Home-

brew" is nearly as bad. It undermines health slowly but surely. Children, fortunately, have no natural liking for any alcoholic drink; and there is no reason why they should ever acquire it.



SCHOOLS SHOULD TEACH SAFETY

Point out the helps to health and safety shown in this picture.

Sensible persons will learn never to do anything that, beforehand, they know will result only in harm. Another drug that is harmful to children is tobacco. Fortunately the habit of smoking cigarettes, which is now almost universal among older people, does not attract boys and girls of your age. Tobacco never did anybody any good. Its use is an unclean and expensive habit. My advice to you is, "Don't learn to smoke."

One of the best ways to build strong bodies is to

play out of doors as much as you can. You should, however, choose a safe place for your games. Nowadays most cities and towns provide spacious recreation grounds for people of all ages. Here the littlest children have sand-heaps, wading-pools, swings, and other play apparatus; older boys and girls have outdoor gymnasiums, tennis courts, baseball fields, football fields and swimming-pools; and many fathers and mothers enjoy using these as much as their children do. These playgrounds are so situated in various parts of the town that nobody has to go very far to reach one. They are much the safest and most suitable places for outdoor games.

Some cities set aside one or two streets, as "play streets" if no land is available for playgrounds. These are, of course, better than nothing; but streets were intended for traffic only, so they do not lend themselves very well to other purposes. Unless a street is clearly reserved for play, you should never try to play your games there. I have heard of altogether too many injuries to boys and girls who dashed in and out among automobiles and teams. Even while you are attending strictly to the business of going somewhere, you often find the street a dangerous place unless you keep your eyes wide open. Be sure to follow the "rules of the road." Be partic-

ularly careful at street-corners to cross only when the traffic officer or the signal tells you that you have the right of way.

Nowadays we frequently see boys begging rides from passing automobilists. This is not a good habit. In the first place, you can never tell whether a stranger is a careful driver or not. You certainly would dislike to get hurt in any accident that might overtake him. Also, it is not courteous to stop a driver who has his own affairs to attend to. Last of all, it is much better for you to exercise your legs in walking than it is to ride wherever you want to go. Probably I do not need to point out to you the very great danger in "hitching on" to moving automobiles and teams. Many trucks have a large sign "Danger!" painted on their tail-boards. This sign means exactly what it says. Boys who try to steal rides on the big trucks that look so inviting very frequently come to grief when they try to drop off from a machine that is moving faster than they thought it was. Remember that pavements are often slippery; they are always very hard. You are liable to get a bad fall — and you risk getting run over by the truck next behind.

Other chapters in this book tell you about such health-giving activities as swimming, hiking, camping, skating, and so on. In each of these

you will find suggestions as to how to avoid accidents while doing these things. Then in the chapters about the Boy Scouts, the Girl Scouts and the Camp Fire Girls, I hinted at some of the "First Aid" information you ought to acquire — so that if accidents do befall you, or others, you will be prepared to help in their treatment. All that I need to add here, I think, is a word of caution about two kinds of vacation accidents that can easily be avoided if you use a little common sense.

The first warning is: — be careful when you go into deep water. You may be a good swimmer, but it isn't always easy to judge your strength. You might sometime find that you were too far from shore to get back safely. Be careful, also, when you go in a boat or a canoe. Skillful sailors and paddlers never take chances; they realize the danger of being upset in deep water, and they insist upon keeping their little vessels on an even keel and right side up. If you spend much time swimming or sailing or on the beach, you will doubtless acquire a fine coat of tan or sunburn. Don't get too much of it, however. In the first place, the process soon becomes painful. More important is the fact that it is very easy to injure your skin by exposing it too long to the hot summer sun — for sunburn is quite as truly a *burn* as any caused by careless handling of fire.

My second warning is:—be careful with Fourth of July fire-crackers and fireworks. Our great national holiday has, I suppose, always and everywhere been celebrated by making a great deal of noise and a great deal of illumination. This isn't the most sensible way of celebrating, and it frequently leads to harm when too much gunpowder is used. The more powder, the more racket, or the brighter flash, of course; people therefore try to outdo their neighbors, and all too often the result is a premature or over-heavy explosion, with some one painfully injured perhaps for life, or even killed. The wiser cities and towns now provide Fourth of July programs of music, athletic contests, and parades. The dangerous fire-cracker is outlawed. Dignity is given the observation of the Nation's birthday. The waste of human health and life is avoided, not to mention the destruction of homes by fire that sometimes follow old-fashioned celebrations of the "glorious Fourth."

We come now to my suggestions about safety at school. There are two principal ways in which you can do your part in safeguarding both yourselves and the other pupils. One has to do with precautions against contagious diseases, like colds, measles or whooping cough; and the other has to do with precautions against fire.

Many contagious diseases begin with a sore throat, or a cold. If, therefore, you wake up some morning feeling that you are going to have a cold, the best thing to do is to tell your mother about it and stay quietly at home. Colds spread easily and quickly from one person to another, and so do more serious illnesses. That is the reason why you should stay away from other people when you feel that you have perhaps "caught cold." Doubtless you have seen the school doctor or the school nurse send several pupils home after examining them. This is for the purpose of safeguarding the rest of the pupils against any possibility of catching the ailment, whatever it may prove to be. The doctor is one of the children's best friends. He knows exactly what to do to protect the health of each and all of you; so I hope you will always follow his advice. The surest way to cure even a common cold is to apply the necessary remedy at the earliest possible moment; and the best place to do that is at home.

Fires, like contagious diseases, can be fought best when they are first discovered. Nowadays, bad fires in school-houses very rarely occur. Modern buildings are fire-proof, and there are broad corridors and stairways as well as fire-escapes, and there are plenty of fire-extinguishers.

Nevertheless, it is necessary for schools to practice their fire-drills in order that there may be no wild rush to escape if a smoky fire ever should break out in a store-room or coal pile.

Perhaps you already have a Safety Club in your school which discusses not only all the ideas that I have given you in this chapter but also many others. If you haven't, you will find it worth while to organize one. You should have the usual club officers, a set of by-laws, and regular meetings. A worth-while subject to which to devote an early meeting would be "Fire Precautions at School." To prepare yourself, you should know exactly how to perform your fire-drill, where the school fire-extinguishers are kept and how to use them, where the fire alarm is located and how to call the fire department. An inspection of your school by a committee of pupils might help the authorities to discover whether there are any unsuspected fire risks, whether the fire-escapes are kept clear of all obstructions, whether the doors open outward, as they should, and perhaps other facts that ought to be known.

In any event, whatever you learn about safety at school, either through your club or in class will be of value to you throughout life; and this is, I believe, true of everything that is taught to-day

in the splendid public schools throughout our country.

QUESTIONS AND PROJECTS

1. Make a series of drawings for safety posters, and write slogans to go with them.
2. Write out a list of the ways in which you intend to help to avoid accidents: (1) at home; (2) on the street; (3) at play. Discuss this list in class.
3. Organize a Safety Patrol. The members should learn the traffic rules for the neighborhood in which our school is located and should show the rest of the class how to obey these rules.
4. Find out where the fire-alarm box nearest your home is located. Learn how to pull in an alarm.
5. Bring to the class stories about incidents that show how people were careful about health and safety. Choose one and dramatize it.
6. Bring to the class newspaper accounts of accidents, fires, and epidemics. Discuss them with the idea of bringing out the ways in which these happenings could have been prevented.
7. Make a list of events that you would include in a program for a "safe and sane" Fourth of July in our community.
8. Write letters to the Cleanliness Institute, 45 East 17th Street, New York City, and to the National Safety Council, 108 East Ohio Street, Chicago. Tell about your lessons in health and safety and ask for suggestions. Select the best letters written in your class and send them.
9. Send a class letter to the American National Red Cross, Washington, D.C., asking for their booklets about Life Saving Methods, and First Aid Instruction. Demonstrate as many as possible in the classroom.

SETTING-UP EXERCISES ¹



EXERCISE 1

Position: Heels together, arms down and at sides, palms in.

Movement: Swing arms sideways, upward to vertical, and return.



EXERCISE 2

Same as Exercise 1, except that arms are swung forward, upward to vertical.

¹ Prepared by George J. Fisher, M.D. *Secretary, Physical Department International Committee Young Men's Christian Association*, from the *Official Handbook for Boys*, Boy Scouts of America. Used by special permission.



EXERCISE 3

Position: Arms extended to side horizontal.

Movement: Swing forward and return.

(Emphasis upon backward movement.)



EXERCISE 4

Position: Arms at side, horizontal, back slightly arched.

Movement: Circle arms backward.



EXERCISE 5

Position: Forearms flexed at side of chest.

Movement: Thrust arms forward and return.



EXERCISE 6

Position: Arms at front, horizontal, forearms flexed, fingers on shoulders.

Movement: Swing backward to side, horizontal in position.



EXERCISE 7

Position: Same as 6.
Movement: Swing downward, forward, bringing arms beyond sides of body. Rise on toes with end of backward swing.



EXERCISE 8a

Position: Arms at vertical, thumbs locked, head fixed between arms.



EXERCISE 8b

Movement: Bend forward as far as possible, without bending knees, and return.



EXERCISE 9a

Position: Arms at vertical. Repeat Exercise 8b.



EXERCISE 9b

Movement: Arm circles, downward, inward, across chest. Reverse the movement.



EXERCISE 10

Position: Hands on hips.

Movement: Forward bend.



EXERCISE 11

Position: Same as Exercise 10.

Movement: Backward bend.



EXERCISE 12

Position: Same as Exercise 10.

Movement: Sideward bend, right and left.



EXERCISE 13

Position: Same as Exercise 10.

Movement: Rotate body at waist.



EXERCISE 14

Position: Same as Exercise 10.

Movement: Raise high on toes. (Hold shoulders back firmly.)



EXERCISE 15

Position: Same as Exercise 10.

Movement: Full knee bend.

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